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GUNSHOT FRACTURES OF THE SKULL

STATISTICAL AND CRITICAL REVIEW BASED ON A SERIES OF SEVENTY-FIVE CASES *

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While I was laboring short-handed in a 1,500 bed hospital during the onset of the Somme push last summer, it was my lot to care for several hundred gunshot fractures of the skull. In spite of the stress of operative and directing work and with no clerical help, I made detailed notes on seventy-five patients, including necropsy records in the fatal ones. To group patients and lighten the work for medical officers and nurses it seemed wise to put patients with head injuries in one ward, using a neighboring ward when an overflow of the thirty-five bed unit occurred. As a routine, spinal puncture, roentgenography and scalp incision were employed to establish diagnosis. We were not supplied with a sphygmomanometer, and so could not make observations on the blood pressure findings.

Fig. 1.—Types of missiles found in gunshot wounds. They are compared in size to an empty cartridge shell (9); 1, 2, 3 and 5 are pieces of shrapnel cases; 4 was from a high explosive shell and was removed from a soldier's brain; 6 and 8 are the Teutonic rifle bullet and soft shrapnel bullet; 7 is from the base of a shell.

Routine eye examinations were made in every case. To Major Charles A. Maghy, oculist of our hospital, I am indebted for painstaking and thorough work in this branch, often carried late into the night, because all patients with head injuries were examined at once after being received in a convoy. In the case reports, some points in connection with these examinations may seem to be lacking. To save repetitions, when there were no positive findings, they are not mentioned.

All operations for elective decompression, drainage and removal of bone fragments or foreign bodies were performed under ideal conditions. The asepsis was rigid. An elastic tourniquet was used in every case possible, and subtemporal decompression was performed as the operation of choice for relief of intracranial increased tension when indications did not point to using the wounds already present.

It seems necessary to call attention to the great protection afforded troops within the firing zone by metal helmets. There is no doubt that the present method of trench fighting and the use of machine guns and shrapnel or high explosive shells lead to a high percentage of head injuries. Metal helmets certainly reduce the mortality of this class of injuries either by diminishing the velocity of the missiles or by deflecting them. All the patients here enumerated were questioned on this point. When able to respond, some told of the hole in their helmets, and some brought them along as souvenirs; but although we understood that discarded helmets were so common around the firing zone that they were used for chicken feed basins, not many came for examination to the base 40 miles away. In practically every instance the helmet was being worn at time of injury—in some the shot had struck below the brim.

REPORT OF CASES

CASE 1.—Lance-Corporal W. S., aged 35, Eighteenth Canadians, who had served one year, and was admitted, June 7, 1916, seemed demented from a gunshot wound of the right eye and frontal bone. He asserted that he had had no food for eight days. Spinal puncture revealed a pressure distinctly above normal, and a cloudy fluid which contained about 25 polymorphonuclear cells per cubic millimeter.

On the evening of June 6, his temperature had risen to 101.3 F.; the pulse was 88. June 27, a subtemporal decompression was performed. The cerebrospinal fluid was under excess pressure. The dura was opened and the frontal fossa explored. No abscess of the right frontal lobe was found. A guttapercha drain was inserted.

* From material obtained while the author was officer in command of the surgical division of the Twenty-Third General Hospital, British Expeditionary Force, France, 1916.

* On account of lack of space, this article is abbreviated in THE JOURNAL by the omission of many case reports. The complete article appears in the reprints, a copy of which may be obtained on application to the author.

Progress was favorable until July 10, when the patient became nauseated and restless and had another rise of temperature. Death occurred July 15.

Necropsy.—My craniotomy wound was completed healed and uninfected. The dura had practically closed over the cortex in this area. The *left* hemisphere of the brain, however, showed a diffuse cortical meningitis involving the pacchionian bodies. The left temporosphenoidal lobe, opposite from the enucleated eye, was a softened abscess mass. There was a diffuse basilar suppurative meningitis. The infection had traveled by way of the right eye into the nose, across into the left middle cerebral fossa and to the left hemisphere. There was no direct infection through the right orbit. There

Fig. 2.—The British protective steel helmet with perforation by large shell fragment.

was present also a small linear crack in the right sphenoidal bone, which was uninfected. It was clearly demonstrated that the infection had not traveled by way of the optic nerve.

Case 2.—Private C. T., aged 21, Twenty-Seventh Canadians, who had served one and three-fourths years, admitted, June 8, 1916, had received a gunshot wound of the head from shrapnel in the left frontal region penetrating and depressing the frontal bone. A subtemporal decompression was done immediately and an extradural blood clot found with a torn middle meningeal artery. A small piece of shrapnel lying on the dura was removed. The dura was opened. A gutta percha drain was inserted.

In two days the patient developed convulsions and a right-sided hemiplegia, after which the wound was opened widely and allowed to bleed freely. A hernia cerebri developed. The patient continued in a somnolent condition, and died, June 19.

Necropsy.—There was a bloody extravasation of the scalp and temporal muscle; some clots were present on the cortex with a hernia cerebri. There was no localized infection. On removal of the brain, no other skull fracture was found than the frontal puncture, nor was there basilar hemorrhage or meningitis. There was no foreign body in the brain. The left hemisphere was composed largely of dark blood clots which seemed to originate in the posterior wall of the lateral ventricle. Because of the manner of opening the brain, the choroid plexus could not be satisfactorily examined for a series of hemorrhages or ruptured aneurysms. A diagnosis of ventricular hemorrhage was made.

Case 6.—Private G. M., aged 32, Sixtieth Canadians, who had served eleven months, admitted May 20, 1916, had a gunshot wound in the right occipital region 1 inch behind the ear, over which crepitation was palpable. On the left side of the head in the occipital region just above the base line there was apparently a small wound of exit. The patient did not know whether he was struck by shrapnel or a bullet, but he was unconscious some hours and vomited immediately after the wound, which was received, May 18. His sight remained entirely gone until May 20. May 21, his vision in both eyes was limited to the recognition of fingers, and there was no nystagmus. The right fundus showed the disk slightly blurred at the edges, the left disk being normal. The right superior vein was dilated and there were a few flame-shaped hemorrhages just beyond the disk margin. May 21, operation removed the shattered bone fragments from the wound of entrance, but no extensive decompression was attempted. By May 25, vision in both eyes was 9/8 and both fundi were normal. The fields of vision were normal. The patient made a complete recovery, temperature dropping to normal on the fifth day. The diagnosis was complete penetration of the occipital lobes with symptoms. The patient was sent to England, June 14.

Case 7.—Private J. C., Canadian Royal Mounted Rifles, admitted, June 7, 1916, with diagnosis of shell shock and history of having been blown up in a trench by a shell and of having had several sandbags fall on him, was unable to answer questions correctly, and was incoherent. There was a suffusion in both eyelids, and just above the left supra-orbital ridge there was found a fluctuating tumor the size of a robin's egg. On the day of admission he developed more signs of cerebral irritation, and attempted to get out of bed. In a few hours the pulse became 64, regular and full, and the breathing stertorous. The hematoma on the forehead burst next morning, and fomentations were applied. Retention of urine developed. June 9, an eye examination was made in spite of considerable mucopurulent secretion and conjunctival injection. The pupils were round and equal, and reacted to light and accommodation. Fundus examination revealed tortuous veins in each eye with a blurred disk margin and no hemorrhage. The next day the patient was unable to talk, but was restless and smiled at me.

A subtemporal decompression was performed, and an extensive area of hemorrhage was discovered over the whole left lobe with a ragged wound and a compound fracture in the left frontal bone extending through the frontal sinus. The tract of the missile was discovered running down to the base of the brain, but the metal could not be recovered. Small tubal and gutta percha drains were inserted after ligation of the middle meningeal artery. Death occurred, June 12, with necropsy the next morning.

Necropsy.—This revealed diffuse hemorrhage over both sides of the cortex; some edema of the brain; no basilar or purulent meningitis but considerable hemorrhage at the base; a small fracture of the superior wall of the left orbit, and a small fracture at the midline of the base just back of the crista galli. The cortex was bulging out of the decompression opening. A puncture fracture of the left frontal bone was found, and in the left hemisphere near the middle, not far from the cortical surface, and at the end of the hemorrhagic tract, was found a small piece of shrapnel casing.

Fig. 3.—Felt lining of the British helmet. This softens the pressure of the metal and affords additional protection. Note the perforation by shrapnel.

Case 10.—Private H. G., aged 19, Fifty-Second Canadians, machine-gun section, admitted, June 8, 1916, had a gunshot wound of the forehead which had been received at Ypres six days before, where he had been struck by a shell fragment. There was a large penetrating wound in the *left* frontal region, the edges of which were necrotic and sloughing, and bubbles of gas appeared at its margin. There was a marked ptosis of the right eye, but there were no paralyses or speech disturbance. Roentgenoscopy revealed a large irregular-shaped piece of metal in the *right* frontal region about 2½

inches from the anterior and three-fourths inch from the lateral surface of the skull, and two smaller particles in the region of the ethmoid sinus.

June 8, an operation of decompression in the right frontal region was performed, and the metal located in the brain was removed without difficulty. An abscess was found about this metal and a gutta percha drain inserted, the right eye being enucleated.

Subsequent symptoms were return of consciousness followed in five hours by convulsive twitchings of the right side of

Fig. 4 (Case 9).—Helmet and skull wound: a proof of the life-saving power of the protection.

the face, and gradually deepening somnolence, with death, June 10, at 8 p. m.

Necropsy.—The whole frontal areas of both lobes were pulpified and bloody, and there was an extensive basilar suppurative meningitis. The back wall of the right orbit had been knocked off by the shrapnel, and one small fragment of bone had been driven down to the base of the skull. Death resulted from extensive infection.

CASE 13.—Sergeant W. F., aged 23, Fourth Middlesex, who had served five and one-half years, was injured, July 1, 1916, by rifle fire at Fricourt, and walked to the dressing station. He was admitted to my service, July 2, with a paralysis of the left arm and a wound in the right temporal area accompanied by a depression of the bone.

July 6, a decompression operation was performed over one side, and extensive subdural hemorrhage and brain contusion were found. The dura was lacerated. After the necrotic scalp had been cut away, a plastic operation was performed to cover the defect of the skull. Inside of two days he developed an edema of the right side of the face and forehead, and the paralysis in the left arm remained permanently. Later this condition cleared up and the scalp wound was granulating, and by July 22 was clean; but a hernia cerebri was developing. The patient was perfectly clear mentally, and was anxious to be sent home. The hernia cerebri was increasing gradually, and in spite of all treatment became so large that the prognosis was very unfavorable. Some motion returned in the paralyzed arm. Repeated spinal punctures failed to reduce the size of the protruding brain, and death finally occurred, August 24, after only one day of unconsciousness. At necropsy an extensive delayed meningitis was discovered (Figs. 6 and 7).

CASE 22.—Sergeant H. Q., aged 30, Ninth Staffs, was injured, June 22, 1916, sustaining a gunshot wound of the head and a gunshot fracture of the right femur. He brought a letter from the Second Canadian Casualty Clearing Station as follows: "He has had scalp wounds but no shock. These wounds were explored, showing grazing of bone and line of fracture extending over the longitudinal sinus. The fracture area was cleaned and some slightly depressed bone over the sinus was left undisturbed. A small piece of metal was found and the scalp wound was left unsutured after cutting away its edges." He left the casualty clearing station, June 24, complaining of headache, and was admitted to my service, June 25, with vision and fundi normal, and temperature 97.8. June 30, the wound near the midline of the vertex was opened and a depressed fracture with crater eminence of the inner table was shown. The bone was trephined and the dura was found to be slightly scratched, but evidently not punctured. The dura was opened and no subdural hemorrhage was found, but the cortex appeared edematous. The wound on the right side of the head was also explored, and it was found that the shrapnel had penetrated the skull. This was found lying on the dura, which was not opened. All the wounds were dressed and drained. The patient had some suppuration in the head wounds lasting for ten days, no headache and normal temperature. The wounds were dressed by hypertonic salt solution. By July 21, he had so far regained his health that he was sent to England.

CASE 24.—Private R. J., aged 30, Second South Lancashires, who had served twenty months, was injured, July 2, having sustained a gunshot wound of the head and right leg from rifle fire during an attack on enemy trenches. He lay out in the open two days and three nights, during which time he received three more wounds, including one in the head. He was admitted, July 6. Right and left vision was ⅝, and the fundi were normal. July 7, he was operated on, and a depressed fracture of the frontal bone just to the right of the midline was discovered, a subdural clot exposed, and the brain, found severely lacerated, was drained. A nail extension for the fracture of the thigh was performed. By July 15, symptoms of meningitis appeared, and death occurred, July 21.

Necropsy.—There was a healing wound of the right frontal region; no hernia was to be seen outside the scalp. The right thigh was fractured. There was an infected gunshot wound of the right leg; there was very little pus around the scalp wound, and the brain seemed collapsed. A small hernia cerebri was seen through the dura when the scalp was reflected. The meninges were clean on the outside, but there were a diffuse septic meningitis and encephalitis of both lobes and at the base. There was no brain abscess; there was a fracture of half the temporal bone into the middle fossa and left orbit. The pus from the left frontal sinus had burrowed into the left frontal fossa.

Fig. 5.—Skull wound resulting from the shot through the helmet, shown in Figure 3.

This is an instance in which the infection did not come from the operative wound, but from the extension of the sinus on the opposite side.

CASE 29.—Private T. W., aged 27, Tenth Cheshires, injured near Albert, July 11, by shrapnel, was admitted, July 13, perfectly conscious and with no paralyses (Fig. 10). Roentgenoscopy revealed a foreign body in the right orbit and a large piece of shrapnel at the base of the brain. The right eye was ruptured. Vision in the left eye was normal. At operation the right eye was enucleated, and the shrapnel removed from

the lower wound of the orbit. The penetrating wound on the left frontal sinus down toward the base of the brain and the right orbit were drained, but the shrapnel at its base was not found. This wound was very jagged, and brain substance oozed out of it, the bone fragments having been driven down deeply into the anterior fossa. The deep sloughing wound of the left cheek which had crushed the superior maxilla was

Fig. 6 (Case 13).—Hernia cerebri; large and infected; patient quite conscious.

also drained, the mouth apparently having not been opened into. The metal at the base of the brain could be palpated by sound at a depth of 3 inches. The patient had also a penetrating wound just above the inner end of the left clavicle, multiple small wounds of penetrating character over the left triceps and left deltoid region, and others involving the left costal region, left thigh and right leg, in all twenty-seven different gunshot wounds. He made a complete recovery from his head injuries excepting for a facial paralysis on the left side. The gunshot wounds of the pelvis and right tibia were doing fairly well, and he was sent to England, August 19 (Figs. 10 and 11).

CASE 67.—Private C. H., Eighteenth Australian Infantry Force, had a gunshot wound of the head and right shoulder. He was admitted unconscious, but his field card indicated that he had been wounded, August 4, near Albert. There was a penetrating wound of the left parietal region about 2 inches directly lateral to the obelion. Roentgenoscopy revealed a fracture of the left temporal bone with a large piece of metal in the brain at the depth of 1 inch. The patient was unable to express any thoughts, but by August 7, after lumbar puncture, the pulse rose to 78. August 11, he could move his right leg but not his arm, and the facial paralysis which had been present was nearly gone. August 21, he was quite rational, was improving steadily, and could move both hands and feet. He made a complete recovery without operation and with the metal still remaining within his brain.

COMMENT

In Tables 1 and 2 the cases are summarized according to the bone involved (by wound of entrance), the cranial structures involved by the missile, and hernia cerebri. The number of instances of foreign body in the brain (not bone) was 23; removed, 2; operations, 12; recovery, 15; deaths, 8; no serious symptoms, 15; serious symptoms, 8. Other causes of death were ventricular hemorrhage in Case 2, brain hemorrhage in Case 7, and tetanus in Case 36.

Two patients showed marked symptoms of insanity, and although both were operated on for decompression, no relief of symptoms was obtained.

Two patients developed epilepsy. In the instance of the one on whom operation was performed, recovery followed.

In two patients dying of meningitis, necropsy revealed a conveyance of infection by way of other tracts than the wound caused by the missile. In Case 24, infection was carried in from the sinus opened on

TABLE 1.—SUMMARY OF CASES

	Patients			Results	
	Number	Operated on	Not Operated on	Recovery	Death
Bone involved (by wound of entrance):					
Frontal	22	11	..	14	8
Parietal	17	11	..	14	3
Temporal	19	11	..	15	4
Occipital	17	6	..	13	4
Cranial structures involved by the missile:					
Cranium alone	31	12	19	28	3
Dura opened	9	8	1	5	4
Cortex exposed	4	4	0	1	3
Cortex punctured	29	16	13	20	9

the opposite side to the brain puncture, and in Case 45 infection occurred by way of the middle ear.

Other noteworthy cases were Case 48, in which there were cerebral hemorrhage and sinus thrombosis; Case 67, in which the patient made a perfect recovery after hemiplegia with a large piece of metal still in the brain, and Case 68, in which there were positive eye findings, very slow pulse, and evidence of greatly increased intracranial tension.

Approximately half the number of these patients were operated on. Although the mortality in thirty-

Fig. 7 (Case 13).—Enlargement of hernia in spite of all treatment.

nine operative cases was 46 per cent., and in thirty-six nonoperative cases only 8 per cent., I do not believe operation should be abandoned. Naturally the severe cases, with brain penetration and pronounced symptoms of brain injury or greatly increased intracranial tension, were the ones in which indications were found for surgical decompression. Some patients absolutely astounded me by recovery without operative relief in the face of most serious symptoms and even

large pieces of metal within the cranium. I cannot see that operation has much effect on the stopping of terminal infection when the dura has been opened by the missile.

Complications are less frequent and less severe than one would anticipate. Only two of these patients showed insanity, and also only two showed epilepsy. In the epileptic cases we know that there had been no

Fig. 8 (Case 17).—Healing infected hernia cerebri. The temporal areas seem to offer better prognosis. This wound was drained and skull opening enlarged in the face of serious infection. Recovery.

symptoms of that disease prior to the injury. Of the insane patients we could obtain no past history. Of about 9,000 head injuries in which operation was performed in the Franco-Prussian war in 1870, the records of the German army show that insanity developed later in only thirteen — less than 0.15 per cent.

Since the onset of the war a smaller series of head injuries has been compiled by Lieutenant-Colonel Warren for the British Army; 1,239 patients were studied between two and eighteen months after the infliction of the wound; some of his observations may be quoted.

Forty-six, or 3.7 per cent., died after reaching England. Necropsy in twenty-two of these patients demonstrated that practically all suffered a terminal septic meningo-encephalitis.

Concerning neurologic complications, "there can be no doubt that many patients present symptoms of some degree of mental deterioration, and especially dulness, loss of memory, irritability and childishness, during the early stages after the infliction of the wound; but the reports we have obtained in the later stages, and the records we have been able to examine, tend to show that in the majority of cases these symptoms disappear or diminish."

Serious mental disturbances are rare. Only eight were found, and four of these patients were discharged cured; seven had been operated on. Epilepsy, with seizures of the generalized or jacksonian type, were also infrequent. Convulsions occurred in thirty-seven patients, or 6 per cent., of 610 men on whom complete notes were available. Thirty-three of the thirty-seven had suffered severe open skull fractures with dural and cortical laceration, and four still carried a missile within the brain.

Hernia cerebri is the bugbear of gunshot skull fractures. Nearly half of the seventeen patients of whom I made notes died. All were operated on and seven were improved. Probably some of the ten men discharged to England with a hernia cerebri died at a later period. Warren found that 120 patients out of 610 head injuries reached England with hernia cerebri. Ninety-six of the 610 patients had penetrating wounds with retained missiles. Twenty of them developed hernia cerebri. In sixty-eight patients with through and through wounds, fourteen had cerebral hernia. Finally, in 310 patients with penetrating cranial wounds without retained missiles, eighty-six developed hernia cerebri; nineteen of these died, and sixty-two of

TABLE 2.—RESULTS

	Number	Recoveries	Deaths
Patients operated on	39	21	18
Paralyses improved	8		
Paralyses permanent	4		
Hernia cerebri improved	7		
Hernia cerebri permanent	10		
Terminal meningitis	12		
Brain abscess	1		
Patients not operated on	36	33	3
Paralyses improved	4		
Paralyses permanent	3		
Terminal meningitis	1		

the eighty-six had been operated on abroad. He concludes that there are no grounds for supposing that more radical operations abroad are called for, because it seems doubtful if surgical intervention other than that necessary for the drainage and healing of the wounds diminishes appreciably the risk of later complications, or can modify, except in a harmful direction, the course of these cases from the functional standpoint. Every possible step should, however, be taken to prevent the development of hernia cerebri. The records also show that many patients with foreign bodies lodged deeply in the brain recover, and are scarcely more liable to serious complications than men in whom the brain has been merely exposed and lac-

Fig. 9 (Case 17).—Patient eight weeks later; wound about healed; patient ready to be sent to England.

erated. In my series, twenty-three patients had foreign bodies in the brain, and only eight died, while fifteen showed only minor symptoms directed toward the injury.

The value of eye-ground findings in skull fractures has always been interesting to me. I believe they have little prognostic value that can be elicited early. To be of a distinct help to the surgeon, the eye findings must be obtained early and must be positive if they are

to be used in weighing evidence in favor of decompression. It may be said that negative findings or mild evidence of slight optic neuritis probably indicate a good prognosis, barring late infection and plastic meningitis. In these seventy-five cases, less than 8 per cent. gave any positive findings which indicated decompression. A large percentage gave an early reduced vision which

Fig. 10 (Case 29).—Severe skull injury; large piece of metal buried deep in left face; another missile entered at base of nose and lay near sella turcica; right eye destroyed; wounds of face and chin. Besides apparent wounds, the patient had twenty-four other gunshot wounds, one a fracture of the pelvis and one a fracture of the tibia.

alone was not considered an indication for early decompression. In our vicinity Oliver carefully examined sixty-eight patients with gunshot wounds of the skull. He found thirty-seven normal disks and thirty-one instances of optic neuritis which were divided pathologically into two classes: (1) the larger class, showing merely a fulness of veins or blurring of the disks with little swelling, and (2) the smaller class, with marked disk swelling associated occasionally with retinal hemorrhages, the disk being much like that found in tumors of the brain. Of six of the patients with marked neuritis (cerebral compression), four died. All of twenty-five patients with slight optic neuritis recovered after *any form of local wound treatment*. Oliver did not mention late optic neuritis caused by septic meningitis, which I believe may be used in prognosis by observation for several weeks after injury, especially in instances of metal retained within the brain.

My observations make certain points stand out after a small experience with these skull fractures:

A large percentage of patients suffering from gunshot skull fractures reaching the base hospital will recover with no other treatment than thorough rest and a dressing on the wound.

Wounds which involve the cranium alone and give little evidence of injury of the brain tend to rapid cure.

Frontal wounds without deep penetration seem to offer the best prognosis. No conclusions can be drawn from mortality, according to the skull area involved, because it is impossible to weigh the factors of depth of penetration, foreign bodies in the brain, and the amount of infection.

A large majority of the deaths result from septic infection, which often spreads in a slow, insidious manner. Hernia cerebri is not necessarily fatal. It is prone to late and fatal septic meningitis, and no treatment, whether in the nature of an application, as alcohol, hyptertonic salt solution, hydrochlorite, glycerin, phenol (carbolic acid), or posture, repeated spinal punctures or operative removal, is a cure-all.

The finding of bacteria or an excessive number of leukocytes in the spinal fluid offers a poor prognosis.

Hernia cerebri should be avoided when it can be. If the dura is not opened by the fracture it should not be incised — it may be aspirated for subdural hemorrhage.

Bromids and complete rest should be given gunshot skull fractures.

Gas infections of the brain occur and are not necessarily fatal.

Recovery from very serious symptoms with foreign bodies within the brain is possible without operation.

Eye-ground examination and findings are of little practical value in deciding on indications for early operation. They are helpful in late infection and increase in intracranial tension from other causes.

The purpose of operations on fresh gunshot skull fractures should be: 1. To clear and trim wound edges of the soft parts or to remove loose and floating bone fragments. 2. To decompress, preferably in a clean area, when increased intracranial tension from progressive cerebral or dural hemorrhage threatens life. 3. To remove superficially lying foreign bodies when they can be positively located and easily reached.

It is probably unwise to attempt the removal of deep lying foreign bodies, especially those located near vital parts of the brain.

Fig. 11 (Case 29).—Patient after recovery, ready for transportation to England; metal at base of brain never searched for; right eye gone and gunshot fractures improving.

The dura should be preserved as much as possible, and plastics on the scalp should be done after excision of torn edges to cover deeper defects when it is felt that the infection is negligible.

Bone and dura adherent over the sinuses should be left in place.

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AN EPIDEMIC OF SEPTIC SORE THROAT DUE TO MILK *

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During the early part of March, there occurred in Galesville, Wis., a town of about 1,200 inhabitants, a sudden outbreak of severe sore throat. The symptoms were so severe, and the outbreak so sudden, that the authorities and physicians became alarmed.

March 12, one of us was urged to investigate the epidemic. The symptoms were strikingly like those in the milk-borne epidemic of septic sore throat which occurred in Chicago during the winter of 1911-1912 studied by Capps and Miller, and Davis and Rosenow. The relation of the cases to the milk supply was suspected, and pasteurization or boiling of the milk was advised pending the investigation. March 15, it had become apparent that the cases occurred chiefly in families who used milk from a certain dairy. Inspection of the throat and microscopic examination of a smear from the tonsils in the first case recalled at once the picture that was observed in the Chicago epidemic, namely, the presence of much mucus, diffuse redness of the throat, and enormous numbers of diplococci in smears. The subsequent examination from house to house of some thirty patients showed clearly that this was not an epidemic of ordinary tonsillitis so prevalent at this season of the year, but one presenting the typical picture of "septic sore throat." In some households all members of the family were stricken, from grandparent to child, each being too sick to care for the others.

After an incubation period of from one to three days, the attack usually began with a severe chill or by several less severe rigors. This was usually followed by restlessness, high fever, ranging from 102 to 105 F., intense aching of the muscles, extreme prostration, great pain on swallowing, and tenderness on one or both sides of the neck due to enlarged lymph glands and to the accompanying edema and infiltration. At first the amount of inflammation of the throat was slight, considering the severity of the constitutional symptoms. Later, in the severe cases, intense diffuse hyperemia and edema of the pharynx, tonsils and soft palate supervened. Small superficial ulcers were common on the uvula and pillars. There was temporary edema of lips and eyelids. The pulse was relatively slow. The lips and finger nails were blue. The acute symptoms lasted usually from three to five days, but in some the fever became septic in type as the enlargement of glands and infiltration in the neck persisted for some weeks. Relapses and complications were common. They occurred usually after the first week or ten days of illness. Erysipelas of the face and otitis media were the most frequent complications observed. Pleurisy, pericarditis, endocarditis, arthritis, peritonitis, myositis and synovitis were noted. Symptoms simulating acute rheumatic arthritis, one of the complications, were found in most instances to be due to myositis and tenosynovitis. Pneumonia and nephritis were not observed.

About 200 persons were affected, of which approximately 95 per cent. consumed the contaminated milk. In some instances the drinking of a single glass of the infected milk was followed within forty-eight hours by typical attacks.[1] There have been eleven deaths, due chiefly to erysipelas, peritonitis or cardiac complications. Promptly after the milk was boiled, the spread of the epidemic ceased. The few "secondary" cases which developed were less severe, and complications and relapses were noticeably less common after the milk was boiled. Persons who had had their tonsils removed previously developed mild symptoms or none at all.

Swabs were made jointly with Dr. Thompson from six patients and cultures from the blood in one.

At the dairy it was learned, first, that during the three weeks previously all of the milkers and the wife of one of the dairymen either had been or were still ill with severe sore throat; second, that the milk from well kept, clean Jersey cows was strained into 10-gallon cans and then bottled from a 5-gallon bottler; third, that a number of cows had had mastitis for some weeks, but this condition was no more prevalent this winter than other winters; and fourth, that the milk from infected quarters of the udders was discarded. The milk from three cows (Cows 1, 2 and 3) having mastitis was collected jointly with Drs. Thompson and Henika of the state board of health.[2] This was done by discarding the first strippings and then milking the contents into sterile bottles. In one cow (Cow 1), the right hind quarter of the udder was infiltrated and tender. The material obtained (60 c.c.) looked more like pus than milk. The other quarters were normal, but 90 c.c. of milk were taken from the anterior quarter of the same side for control tests. Smears of the material from the quarter showing mastitis showed an enormous number of gram-positive diplococci (some of which showed capsules) single and in short chains, and many leukocytes. Blood (human) agar plates inoculated with a loopful of this material showed in twelve hours countless numbers of grayish, translucent, moist, spreading colonies surrounded by a rather wide but somewhat hazy zone of hemolysis. Smears from the centrifugalized sediment of the control milk from Cow 1 showed four colonies of the same streptococcus and no other bacteria. Dextrose broth cultures showed marked diffuse turbidity due to diplococci which were single and in short chains. These plated on blood agar yielded the same streptococcus in pure form.

Smears and cultures from the mastitis milk from Cow 3 showed exactly the same streptococcus, while the material from the infected quarter of Cow 2 showed staphylococci and a few grayish colonies of streptococci but not the hemolyzing streptococcus.

Smears from the swabs of the throats of five patients showed many diplococci and leukocytes. The cultures on blood-agar plates yielded large numbers of colonies of streptococci exactly like those from the infected milk. On some of the agar plates were a few green colonies of streptococci, staphylococci, colon bacilli and *Micrococcus catarrhalis*. The preponderance of the characteristic streptococcus on these plates was a striking picture. The colonies like those found in the Chicago epidemic when first isolated differed from the usual hemolytic streptococcus in that they

* From the Mayo Foundation.

1. We wish here to express our appreciation to the mayor of Galesville, A. T. Twesme, who requested the investigation, to Drs. H. A. Jegi and George Christiansen, to the Sacia Brothers, owners of the dairy, and to Drs. I. J. Thompson and G. Henika of the Wisconsin State Board of Health, for their willing cooperation.

2. On arrival at the dairy, Dr. Henika reported the finding of numerous "streptococci" in the centrifugalized sediment of a sample of the contaminated milk procured in the open market.

were larger, less opaque and more moist, and the hemolysis was less marked and less sharply defined. After cultivation for a short time, in some instances in the third culture generation, these peculiar features had disappeared simultaneously with the capsule and the colonies were indistinguishable from the usual hemolytic streptococcus. One of the six patients failed to show the hemolyzing streptococcus. The fermentative reactions of the streptococcus from the milk and throats were identical. Dextrose, lactose, saccharose and salicin were attacked; raffinose, mannite and inulin were not.

ANIMAL EXPERIMENTS

The virulence of the streptococcus, the missing link in the chain of evidence to prove the milk guilty, was demonstrated the next day, March 16, and was so reported to the Galesville authorities. The following protocols suffice to illustrate:

RABBIT 1172.—A medium-sized white rabbit was injected intraperitoneally, March 15, at 11:45 p. m., with 3 c.c. of the puslike material from the mastitis quarter of Cow 1.

March 16, 7:30 a. m.: The rabbit was extremely ill; unable to stand. At 11:30 a. m. it was found dead. The peritoneum appeared opaque and dry. There was no free fluid. There was marked degeneration of the liver and myocardium and cloudy swelling of the kidney. The joints, stomach, spleen and lungs showed no changes. Smears from the peritoneum and blood showed many gram-positive diplococci, single and in short chains.

March 17: The blood-agar cultures of the blood showed large numbers of colonies of the streptococcus injected. Dextrose broth cultures showed diffuse turbidity, and smears showed diplococci, single and in short chains.

Monkey showing erysipelas of the face.

RABBIT 1174.—A medium-sized gray rabbit was injected intraperitoneally, March 15, 11:50 p. m., with 1 c.c. of the salt-solution suspension of the swabs for six patients.

March 16, 7:30 a. m.: The rabbit was very ill. At 10:30 a. m. it was found dead. The peritoneum was dry and opaque. There was marked cloudy swelling of the myocardium, kidneys and liver. Smears from the peritoneum showed very many gram-positive diplococci and few leukocytes showing little phagocytosis. Smears from the blood showed a moderate number of gram-positive diplococci in short chains.

March 17: Cultures from the blood on blood-agar plates showed large numbers of colonies of the streptococcus injected. Dextrose broth cultures showed marked turbidity, and in smears diplococci, single and in short chains.

Two white mice (Mice 44 and 45) injected at the same time, one subcutaneously with 0.3 c.c. of the mastitis material, the other intraperitoneally with 0.1 c.c. of the salt-solution suspension of the throat swabs, were ill the next day, and died from streptococcemia, March 17.

A mouse (Mouse 46), injected intraperitoneally with 2 c.c. of the sediment of the mastitis material from Cow 2, in which the blood-agar plate cultures failed to show the streptococcus, died, March 17. There was a dry peritonitis and there were a large number of the typical streptococci in the blood.

The effect of heating the mastitis material from Cow 1 to 60 C. (140 F.) was determined. Cultures made just prior to heating showed countless numbers of the typical streptococcus, while after pasteurization the cultures were sterile. The unheated material was injected as follows: 2 c.c. subcutaneously into one large rabbit, 3 c.c. intraperitoneally into another rabbit, and 0.5 c.c. intraperitoneally into a mouse. The rabbit injected subcutaneously and the mouse died within forty-eight hours from streptococcemia. The former showed marked subcutaneous edema at the point of injection, acute regional lymphadenitis, acute pericarditis and edema of the lungs. The mouse showed peritonitis. The rabbit injected intraperitoneally became ill but ultimately recovered. The animals injected with corresponding amounts of the pasteurized material remained well.

Similar experiments were done with a sample of milk obtained in Rochester, cultures of which showed large numbers of nonhemolyzing streptococci and a moderate number of colon bacilli. Animals were injected as above, first, with this milk as obtained and kept at room temperature for twenty-four hours; second, with the milk inoculated with the virulent streptococcus (Cow 1) and kept at room temperature for twenty-four hours, and third, with the latter after pasteurization. Those injected with the uninoculated milk remained well, as did those injected with the pasteurized material, while those injected with the milk inoculated with the virulent streptococcus either died or became ill.

It has been held by some that to determine the virulence of streptococci by injection is not sufficient to prove etiologic relationship in these and similar studies. We therefore instituted experiments in which the methods of inoculation simulated those occurring in the epidemic; that is, we fed the infected material and swabbed the throats and scratched the skin. In swabbing the throats, care was exercised to avoid injuring the mucous membrane.

Two mice (Mice 47 and 48), whose throats were swabbed once and which were fed bread soaked in the infected material, died in six and three days, respectively. The latter developed swelling of the left side of the face resembling erysipelas. The former had no evidence of infection of the throat, but showed edema and hemorrhagic infiltration of the visceral pericardium covering a large part of the left ventricle, acute splenitis, and approximately 500 and 1,200 colonies of the typical streptococcus in a drop of blood and pericardial fluid, respectively.

Two mice (Mice 49 and 50), were fed bread soaked in the infected material. Mouse 49 has remained well. Mouse 50 died in six days and showed several small epicardial hemorrhages, acute splenitis, and edema of the tissues surrounding the throat but no apparent enlargement of the lymph glands and no inflammation of the mucous membrane of the throat. The blood showed countless numbers of the typical hemolyzing streptococcus.

The results in a monkey (Monkey 120) are given in detail. March 18, the throat was swabbed with mastitis material from Cow 1, and the skin on the left side of the nose scratched with a wire dipped in the same material. Bread soaked with the material was placed in the cage, no other food being given for one day.

March 19, 10 a. m.: The left side of the face surrounding the scratch was swollen and red, including the lower eyelid. There was no discharge from the nose and no perceptible swelling or redness of the throat. At 5 p. m., the swelling of the left side of the face was more marked and the temperature was 103 F. The throat was again swabbed.

March 20: The swelling of the face was more marked, the left eye was swollen nearly shut, and the edema extended to within 2 cm. of the ear. The right side of the face showed no involvement.

March 21: The swelling of the left side of the face had subsided perceptibly; the skin was wrinkled and beginning to desquamate; there was marked swelling of the right side of the face, as shown in the accompanying illustration; the temperature was 103 F.; the affected area was hot and red.

March 23: The animal's face was still much swollen and red; the monkey seemed ill; the temperature was 103.5 F.

March 24: The swelling of the left side of the face had markedly subsided.

March 25. 10 a. m.: The swelling of the face was more marked, especially on the right side; the right eye was nearly closed; the animal appeared ill; the temperature was 103 F. At 12 noon, it was found dead. There was marked swelling and edema of the whole face extending to the ears on both sides, well into the neck, and over a large portion of the scalp. The submaxillary lymph glands were enlarged and edematous. In the pharynx was a small amount of pus. The tonsils were not perceptibly enlarged, but the adjacent lymph glands and surrounding tissues were edematous and hemorrhagic. A small amount of slightly blood-tinged fluid was found in both middle ears. The mucous membrane of the nares was normal, but that in the pharynx, including that surrounding the eustachian tubes, was hyperemic and covered with much mucus. In the peritoneal and pericardial cavities was a large amount of slightly turbid fluid containing hemolyzed blood, leukocytes and many streptococci. The epicardium was moist and edematous, particularly along the blood vessels and at the base. The anterior leaflet of the mitral valve was edematous at the base, and near the periphery were two small hemorrhages. There was hemorrhagic edema along the base of the pulmonary and aortic valves. The middle aortic semilunar cusp contained a large edematous nodule along the line of closure. The myocardium, kidneys and liver showed cloudy swelling. The left infrapatellar bursa was hemorrhagic and edematous. There were no other lesions. The blood was markedly hemolyzed.

March 26: Blood agar plates from the subcutaneous fluid, the peritoneal fluid, the pericardial fluid and the blood showed the typical streptococcus in large numbers in pure form. The exudate from the middle ears showed chiefly green-producing streptococci resembling pneumococci and a few colonies of the typical streptococcus.

SUMMARY AND CONCLUSIONS

The clinical picture in this epidemic was typical of "septic sore throat" as described in numerous other milk-borne epidemics. Etiologic relationship of the streptococcus found in the milk was proved. The disease occurred almost exclusively in persons who consumed the milk. In some instances the drinking of one glass was sufficient to bring on an attack. The streptococcus was found in enormous numbers in the material from mastitis quarters of the cows' udders and in small numbers in a normal quarter. It was also isolated in large numbers from the throats of patients. High virulence of the streptococcus was proved by inoculation of animals. The lesions produced resembled those found in patients, especially in those animals in which the methods of inoculation simulated those which occurred in the epidemic. Erysipelas was produced in a monkey by scratching the skin with a wire dipped in the infected material. In the same monkey inflammation of the throat associated with acute enlargement of the lymph glands in the neck, with surrounding edema and otitis media followed swabbing the throat with cotton saturated with the same material. Peritonitis, pericarditis, endocarditis, myocarditis and synovitis were common in the animals as in patients. Heating the milk to 60 degrees for twenty minutes was sufficient to render it innocuous.

Virulent bacteria may be present in the udder of cows with no demonstrable sign of disease. It is practically impossible to handle milk without risk of contamination from human and other sources even though the rigid technic of an operating room be employed. Since milk is such an excellent culture medium, inspection of dairies, certification and grading of milk according to sediment tests and bacterial counts as now practiced, while valuable, cannot permanently safeguard the public health. Efficient pasteurization should be universally adopted.

SEPTIC SORE THROAT

EPIDEMIOLOGIC STUDY OF A MILK-BORNE EPIDEMIC AT GALESVILLE, WIS., DUE TO THE USE OF INFECTED MILK

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An explosive outbreak of 325 cases of septic sore throat in a community of 941 people directly traceable to an infected milk supply occurred in Galesville, Wis., from Feb. 26 to March 19, 1917. The interesting factors in this epidemic were:

1. The virulence of the infection.
2. The tracing of the source of infection to six cows.
3. The possibility of the cows becoming infected from the milker.
4. The large number of families infected.
5. The small number of contact cases.
6. The short period of incubation.
7. The abrupt checking of the epidemic.

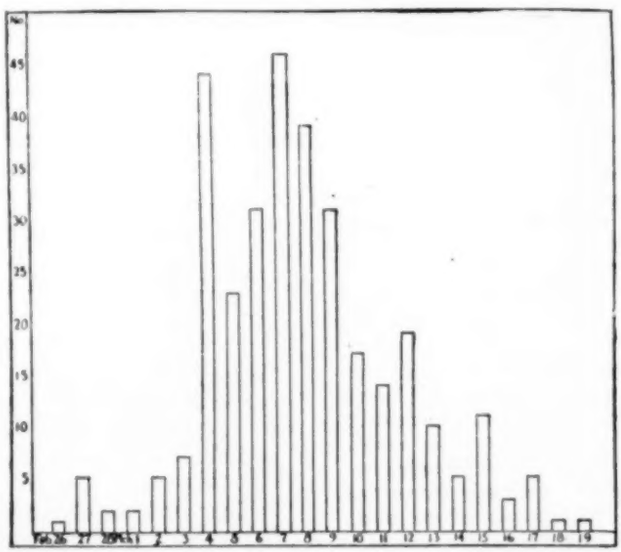
The first case appeared, February 26, and was followed by five cases on the 27th; two on the 28th; two, March 1; five on the 2d, and seven on the 3d. Sunday, the 4th, forty-four cases appeared. Additional cases appeared daily until, March 14, in response to a request of the local authorities, this investigation was undertaken. The explosive nature of the epidemic and the large number of persons infected pointed to a single source of infection, either the milk or the water supply of the village.

To check any further spread of the disease while we were endeavoring to locate the source of the infection, a bulletin was issued and placed in every home, requesting the people to boil all milk and water and giving full directions for disinfecting all discharges from the patient and such other precautions as were necessary to prevent contact infections. As a result of this preventive measure, the epidemic was immediately checked, only two new cases appearing after the period of incubation had elapsed.

The village of Galesville obtains its milk supply from two large herds of over twenty cows, and many smaller ones containing from two to ten cows. During our investigation, the milk from 159 cows was examined. Investigation showed that most of the infected persons obtained milk from a dairy operated and owned by the S. Brothers, who, in addition to running a dairy, also manufactured ice cream. The dairy itself was of a better type than most dairies usually found in like rural communities. The barn was well constructed, with cement floor and steel stanchions, and was fairly well lighted and ventilated. Running water was supplied in a tank in the center of the barn. The herd consisted of forty grade Jerseys, twenty-six of which were being milked at this time. There were four men handling the milk, two of whom were the owners of the plant. These men showed no evidence of any skin disease. In three of them, throat cultures of streptococci were obtained; but they gave no history and showed no evidence of illness, aside from a slight redness of the throat.

One of the S. brothers, about Jan. 28, 1917, had an attack of severe sore throat, the nature of which we were unable to determine. It was accompanied by a marked enlargement of the glands of the neck. It is possible that this may have been a streptococcus infection.

A sample of the bulk milk was taken from the S. dairy and centrifuged. The sediment from this milk examined microscopically showed streptococci, leukocytes and pus cells in large numbers. These streptococci were identical in appearance with the organisms recovered from the throats of many of the patients.



Daily course of the Galesville epidemic, Feb. 26 to March 19, 1917; 325 cases with nine deaths.

The herd of twenty-six cows producing milk was then examined, and three cows were found which gave evidence of having mastitis in one quarter. The milk from these three cows did not show signs of garget as the term is generally understood. It was not thick or clotted, and did not contain blood. The milk of two of these cows had a watery appearance, while the milk from the other cow appeared normal. Samples of milk were taken in a sterile container from each teat of every cow producing milk, placed on ice and taken to LaCrosse, where in the laboratory of the city health department, with the assistance of Dr. J. M. Furstman, we completed our examinations. Streptococci were found in enormous numbers in the milk from six cows. Three of these cows proved to be the same cows that showed evidence of mastitis on the physical examination. One of the six infected cows had a subnormal temperature. The temperature of the other five was normal. Two of these cows were in very poor condition, and one cow showed evidence of stiffness in the joints. Three of the infected cows were young heifers, while the other three were older cows.

The symptoms of this disease as described in previous epidemics were present here with the possible difference of a much shorter period of incubation and a more profound toxemia.

The first symptom to appear was generally a marked chill, followed by a rapid rise in temperature and occasionally by a severe sweating. The entire mucous membrane of the throat was red and covered with a glistening mucus. Nothing resembling a membrane was present except in three cases, and this was readily removable without bleeding.

The superficial blood vessels of the throat were greatly congested, and appeared as scarlet threads on the reddened membrane. The uvula was generally edematous. The tongue was seldom heavily coated. The temperature was usually high, frequently reaching 106. The pulse was generally weak and rapid. The prostration was extreme in all cases. Nausea and vomiting frequently marked the onset of the disease, and in some cases was a serious complication. Seventy-five per cent. of those afflicted showed enlargement of the cervical glands.

The muscles of the neck were stiff, and movement of the head caused pain. Most of the patients complained of difficulty in swallowing.

The infection showed an affinity for serous membranes; endocarditis and pericarditis occurred, and various bursae of the joints were frequently involved. Peritonitis was not infrequent. There were a few cases of erysipelas and several of otitis media. One case of orchitis was recorded. As a result of this epidemic, there had occurred in the village of Galesville, up to March 23, 1917, nine deaths.

It was possible to establish the period of incubation accurately in many cases, as many persons who were not using milk from the S. dairy in their home ate ice cream or drank milk at parties, and almost without exception they were taken suddenly ill within forty-eight hours. Without exception, whenever the period of incubation was three or four days, the result was a mild case.

More females were found to have been infected than males, as the survey showed 184 females and 141 males. Forty-five cases were contracted from having eaten ice cream or from the use of cream in coffee at restaurants supplied with milk from the S. dairy. Most of these patients were men. Several victims ate whipped cream at parties at which only adults were present.

Few children were affected. Therefore, only two age divisions were made. There were 103 patients under the age of 20, and 222 over 20, a total of 325. The total number of families in the village was 242; the total number of families afflicted was 121; 50 per cent. of all families, therefore contained one or more cases.

Only two cases were found that could be classed as contact cases. One occurred in one of the three physicians practicing in Galesville. The other contact case was in an infant whose father contracted the disease in a restaurant the week preceding the illness of the child. Another physican using the milk from the S. dairy contracted the disease. This was not counted as a contact case. Of the 323 cases not occurring by contact, 255 were in families using milk from the S. dairy, and sixty-eight in families not using it.

Of the sixty-eight patients who were not regular patrons of the S. dairy, forty-one contracted the infection at restaurants using S. milk; nine ate S. whipped cream at parties; twelve used S. cream once; four ate S. ice cream (not included above), and two ate S. cream at school.

Forty-eight persons using S. milk escaped the infection. The percentage of population infected was 34.53. The percentage of families infected was 50.

COMMENT

It was our unusual privilege to be called at the height of the Galesville epidemic, to recognize the organism causing the disease, trace the source of infection to a single dairy, isolate the infected cows from the herd, and have the satisfaction of seeing the epidemic checked.

NUMBER OF CASES IN FAMILIES

Number of Families	Number of Cases in Family	Total Cases
39	1	39
34	2	68
20	3	60
16	4	64
6	5	30
3	6	18
1	7	7
1	8	8
1	9	9
*	22	22
121	..	325

* Gale College.

We believe that the issuing of the bulletin, requesting the citizens to boil all milk and water and giving full directions for disinfecting all discharges from the patients and such other precautions as were necessary to prevent contact infections, checked the epidemic, and was a large factor in preventing contact cases. This is a measure that could well be adopted in all milk-borne and water-borne epidemics.

This epidemic furnishes additional proof that pasteurization of bottled milk under official supervision is the only method of securing a safe milk supply.

Segregation of Tuberculosis Carriers.—The Committee on Prevention of Tuberculosis of the Charity Organization Society, New York, has made a study of lodging house cases. This type constitutes a large percentage of cases treated each year which is more careless in habit, more ubiquitous in wandering, and less easily supervised than any other. Statistics for 1911 show that persons living in furnished rooms, in lodging houses or reported as homeless, constituted more than 27 per cent., of all admissions to tuberculosis hospitals in that year. The committee suggested that the health department set aside beds in hospitals to be used for detention cases and that, in cooperation with the police department, facilities be provided for examining lodgers at the municipal lodging house, and that tuberculosis patients when discovered be removed at once to a detention hospital. This suggestion has been accepted by the health department, and Riverside Hospital is used for a detention hospital.

CALCIUM IN THE BLOOD IN TUBERCULOSIS *

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Numerous attempts have been made to show a relationship between the onset and the course of tuberculosis and the metabolism of the mineral elements.[1] The administration of lime as a therapeutic measure has been recommended by different authors through a period of many years and up to the most recent time.[2] High lime administration is employed consciously or otherwise wherever forced feeding which includes much milk (the highest in calcium of the ordinary foods) is practiced. Thus a pint of milk contains about 0.5 gm. of calcium, which is sufficient to maintain calcium equilibrium in an average man, and from five to ten times this amount of milk is frequently used in forced feeding.

It is, of course, difficult to tell with certainty whether or not the calcium salt ingested is responsible in part for the clinical improvement which has been reported in certain cases following its administration. Metabolic balances have been prepared for the mineral elements in tuberculosis, some showing losses of calcium from the body in incipient and others in advanced tuberculosis. Sufficient work has not been done, and the findings have not been constant enough to support definitely the view of a preliminary decalcification predisposing to tuberculosis or that the losses in more severe cases are essential manifestations of the disease. It has also been assumed that the administration of these salts might stimulate the processes of calcification, in particular those of the tubercles, and thus aid in the localization of the disease. For this there is again no real physiologic evidence. The unsatisfactory status of our knowledge of calcium metabolism in tuberculosis is to a considerable extent a reflection of a similar condition with regard to normal calcium metabolism. For instance, very little is known with regard to the conditions of transportation of calcium and the factor or factors which determine its deposition in particular tissues. Our knowledge of the calcium content of the blood under various conditions has been almost negligible. No determinations of this element in the blood of patients with pulmonary tuberculosis have been made, so far as we are aware, in spite of the obvious bearing of such information on the views which have been presented.

We have, therefore, determined the amounts of calcium present in the blood in a number of patients suffering with pulmonary tuberculosis whose conditions are becoming progressively less favorable, as well as in certain patients convalescing from the disease. The method employed for the determination was the one elaborated by two of us.[3] The determinations were made on the serum, which we have found in the pathologic conditions so far studied not to deviate significantly from the plasma in calcium content.

* From the Laboratory of Physiological Chemistry of Jefferson Medical College.

1. A review of the literature is given by Kahn: Med. Rec., New York, 1914, **85**, 924.
2. Fisac: Siglo méd., 1916, **63**, 717.
3. Halverson, I. O., and Bergeim, Olaf: Jour. Biol. Chem., 1916, **24**, 22.

The convalescing patients were sanatorium patients showing great improvement in symptoms and physical signs of the disease. The blood was taken before breakfast, no milk or other food high in calcium being given in the evening meal just preceding. The advanced cases were chiefly from the Department for Diseases of the Chest of the Jefferson Hospital, and with a few exceptions the blood samples were taken before breakfast.

The calcium content of the blood serum of normal human adults appears to range between 9 and 11 mg. per hundred c.c., usually, however, below 10.5 mg. It will be noted that the maximum variations observed in tuberculosis are from 8.4 to 11 mg. of calcium per hundred c.c. No striking deviations from the normal were noted in this condition. In the advanced cases the variations were the most marked. Rather high values were obtained when the blood was drawn after the noon meal (Cases 8, 9 and 24), which might possibly indicate that the ingestion of the food had some slight temporary effect on the calcium level. Considerable amounts of fat were found in these specimens of blood, suggesting that fat was being absorbed and transported. Thus it appeared to be desirable to take specimens for blood calcium determinations before breakfast, which was done in nearly all the cases herein studied. It will be noted that the average value obtained in the far advanced cases in which the patient died within two months of this examination was 9.1 mg., while the average of the far advanced cases showing slight improvement was 10.1 mg., an appreciably higher figure. A similar relation holds for the moderately advanced cases. The differences, however, are not sufficiently large or sufficiently constant to permit the drawing of a definite conclusion in the present state of our knowledge.

In the convalescing cases the calcium content lies well within normal limits, and varies but little. The average figure obtained was 9.7 mg. per hundred c.c. of blood serum. The diets in these cases were similar, nearly all being high in milk and hence in calcium. The lowest value was obtained in a patient no longer on a high milk diet. There is no evidence, however, that the long continued high calcium diet had any tendency to increase the calcium content above average normal values.

The calcium content of the blood appears to be regulated with great nicety, and we have found it to be within normal range in a considerable variety of pathologic conditions. Marriott and Howland[4] have shown that marked decreases occur in uremia with acidosis, these being apparently brought about by the phosphate retention which takes place. Here the lowered calcium appears to be secondary to marked changes in the chemical composition of the blood as the result of exceptional disturbance in the excretory function. In such cases we have observed increases toward the normal range in blood calcium after calcium lactate administration. Whether or not this is due to withdrawal of blood phosphate through the intestine by the ingested calcium, the findings would not seem to have any direct applicability to pulmonary tuberculosis, in which disturbances of elimination, in any way comparable to this, do not occur.

The constancy of blood calcium has been shown by Meigs and Blatherwick.[5] They found calcium remarkably constant in the blood of cows during pregnancy and lactation, although the mobilization of calcium for milk production is very great compared to the amount present in the blood, and this calcium must come, to a considerable extent, from the bones of the animal. In fact, this deficiency of calcium in the metabolism of

CALCIUM CONTENT OF THE BLOOD OF TUBERCULOUS PATIENTS

Case	Name	Diet	Stage of Disease	Condition	Calcium in 100 Cc. Blood Serum, Mg.	Averages, Mg.
1.	J. P.	10 glasses of milk, 4 raw eggs, and one meal	Incipient	Improved	9.9	
2.	A. L.	House	Incipient	Improved	9.4	
3.	E. F.	12 glasses of milk, 6 raw eggs and one meal	Incipient	Improved	10.1	
4.	P. D.	12 glasses of milk, 6 raw eggs and one meal	Incipient	Improved	9.6	
5.	E. E.	12 glasses of milk, 6 raw eggs and one meal	Incipient	Improved	9.9	
6.	J. Ha.	12 glasses of milk, 6 raw eggs and one meal	Incipient	Improved	9.9	
7.	J. Ho.	3 meals	Incipient	Improved	9.3	9.7
8.	B. S.*	House; includes milk	Moderately advanced	Improved	10.9	
9.	A. B.*	House; includes milk	Moderately advanced	Improved	10.4	
10.	C. M.	House; includes milk	Moderately advanced	Improved	10.4	
11.	W. S.	House; includes milk	Moderately advanced	Improved	10.5	
12.	L. P.	House; includes milk	Moderately advanced	Improved	9.6	
13.	J. M.	House; includes milk	Moderately advanced	Improved	10.7	10.4
14.	B. M.	House; includes milk	Moderately advanced	Unimproved	10.2	
15.	D. C.	House; includes milk	Moderately advanced	Unimproved	8.4	
16.	J. P.	House; includes milk	Moderately advanced	Unimproved†	10.9	9.8
17.	M. S.	House; includes milk	Far advanced	Unimproved†	9.4	
18.	G. H.	House; includes milk	Far advanced	Unimproved†	8.6	
19.	G. T.	House; includes milk	Far advanced	Unimproved†	9.1	
20.	H. P.	House; includes milk	Far advanced	Unimproved†	9.1	
21.	B. S.	House; includes milk	Far advanced	Unimproved†	9.7	
22.	G. D.	House; includes milk	Far advanced	Unimproved†	8.7	
23.	M. H.	House; includes milk	Far advanced	Unimproved†	9.1	9.1
24.	J. Hu.*	House; includes milk	Far advanced	Slight improvement	10.6	
25.	S. L.	House; includes milk	Far advanced	Slight improvement	10.2	
26.	T. M.	House; includes milk	Far advanced	Slight improvement	11.0	
27.	N. M.	House; includes milk	Far advanced	Slight improvement	8.7	
28.	J. M.	House; includes milk	Far advanced	Slight improvement	9.1	
29.	J. W.	House; includes milk	Far advanced	Slight improvement	10.6	
30.	A. S.	House; includes milk	Far advanced	Slight improvement	10.5	10.1

* Blood sample was taken after the midday meal; the other samples were obtained before breakfast.
† Died within a period of two months following blood examination.

4. Marriott, W. M., and Howland, John: Phosphate Retention as a Factor in the Production of Acidosis in Nephritis, Arch. Int. Med., November, 1916, p. 708.

5. Meigs and Blatherwick: Proc. Am. Soc. Biol. Chem., December, 1916.

lactating cows has been demonstrated by Forbes and associates.[6]

The total blood of a 60 kg. man contains about 0.3 gm. of calcium. The bones contain approximately 4,000 times as much. With this great reserve supply of calcium, a portion of which is available, as is indicated by the great constancy of blood calcium under varying diets and conditions, a physiologic basis for the administration of calcium salts in tuberculosis has yet to be demonstrated.

SUMMARY AND CONCLUSIONS

Determination of the calcium content of the blood of patients with advancing and convalescing tuberculosis revealed that in the incipient cases in which the patients, who were on a high milk diet, showed marked improvement, the values for calcium in the serum were normal and fairly constant. In no case was the calcium value increased above normal figures by this high calcium diet. In advanced cases the variations obtained were greater (some rather high and some rather low values being obtained), and improving patients showed on the average slightly higher values than the unimproved. No marked deviations from the normal, however, were observed in the calcium content of the serum of patients in the various stages of pulmonary tuberculosis.

The failure of the body to deposit lime around the tuberculous areas is to be ascribed, not to a deficiency in blood calcium, but rather to an inability of the cells of the tuberculous area properly to utilize available calcium.

ICTERUS GRAVIS SYPHILITICUS

ITS RELATION TO ACUTE YELLOW ATROPHY

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Jaundice, occurring as a rare complication in the onset or early secondary period of syphilis, was first recognized by Paracelsus in 1585. It is also mentioned by Portal, Massa, Monti, Batallus, Fallopio and other writers of the latter part of the sixteenth century, in accordance with an early belief that the liver was the site of election for venereal disease. At a later date Ricord[1] recorded icterus in two cases of early syphilis and ventured the statement that syphilis was the cause of the jaundice. In 1853 Gubler[2] substantiated the work of Ricord with a report of seven cases, three of which he collected from the literature, and by clinical observation proved the jaundice to be syphilitic. Subsequently Lancereaux[3] collected reports of twenty cases of syphilitic icterus.

Jaundice in early syphilis is now recognized as occurring in two forms, mild jaundice and severe jaundice, or icterus gravis. The mild form, which is by far the more common, differs very little in symptomatology from ordinary catarrhal jaundice. From an analysis of 15,799 cases of early syphilis in Engel-Reimers' clinic, Werner[4] found that fifty-seven, or 0.37 per cent., were jaundiced. Engel-Reimers[5] reports eleven cases of icterus occurring among 759 cases of early syphilis in women, or 1.4 per cent. The difference in these figures represents fairly accurately the more common occurrence of the condition in women. In Engel-Reimers' series, 80 per cent. of the patients developed the jaundice within three months after infection. In Michael's[6] analysis of twenty-five cases, in three the icterus appeared before the chancre, in one case with the chancre. While most common at the time of the exanthem, a small percentage of the cases occur late in the secondary period, and not coincident with the eruption. In general, the onset is more sudden than in catarrhal jaundice, and there is often an absence of gastro-intestinal symptoms, though too much stress must not be laid on this point, as gastro-intestinal symptoms often accompany the florid stage of syphilis. The appetite is generally good, though there may be a distaste for fats. In some cases the stools are clay colored; in others they are normal. Swelling of the liver is a fairly uniform finding. The spleen is often enlarged, but this may be attributed to the generalized spirochetosis of the secondary period.

The icterus extends over a few weeks and disappears, particularly under treatment, though cases are reported in which it has become chronic. In twenty-five cases collected in seven years from Buschke's[7] clinic, the duration was never shorter under treatment than two weeks, with an average of four weeks. In many instances it has developed into the grave form. That it is not due to the administration of mercury is proved by the fact that it often appears when mercury has not been administered, and readily disappears on intense mercurialization.

The three cardinal points brought out by Gubler, the absence of other cause for the jaundice, its usual appearance with the general eruption, and the rapid disappearance on specific treatment, are the features which still serve clinically to differentiate the syphilitic condition from simple catarrhal jaundice. Salomon[8] regards early syphilitic jaundice as an indication of feeble resistance, and therefore of prognostic importance. Four of Richter's[9] forty-one collected cases were malignant syphilis.

The explanations of the cause of the mild form of syphilitic jaundice are many and varied. Gubler believed it to be due to a roseola or exanthem of the intestine and bile duct. French writers in general regard it as the result of swelling of the portal lymph vessels. Engel-Reimers[5] was able to show at necropsy in three cases that it was an obstructive jaundice caused by syphilitic adenitis of the portal lymph glands. Lubinoff[10] has reported the necropsy of a case of syphilitic icterus associated with precocious late manifestations in which the ductus choledochus was occluded by pressure of an enlarged lymph gland. Senator[11] holds that the jaundice is due to an inflammatory reaction. Neumann[12] says that all of the fore-

6. Forbes and Beegle: Bull. 295, Ohio Exp. Sta., 1916.
1. Ricord: Clinique iconographique de l'Hôpital des vénériennes, 1851.
2. Gubler: Compt. rend. Soc. de biol., 1853, **5**, 255; Gaz. méd. de Paris, 1854, No. 13, p. 186; ibid., No. 15, p. 214, etc.
3. Lancereaux: Traité historique et pratique de la syphilis, Ed. 2, 1866, p. 146; Traité de la syphilis, Ed. 2, Paris, 1873.
4. Werner: München. med. Wchnschr., 1897, **44**, 736.
5. Engel-Reimers, Julius: Monatsh. f. prakt. Dermat., 1892, **15**, 475.
6. Michael: Arch. f. Dermat. u. Syph., 1914, **120**, 694.
7. Buschke: Berl. klin. Wchnschr., 1910, **47**, 238.
8. Salomon, cited in Loomis, A. L., and Thompson, W. G.: System of Practical Medicine, by American Authors, New York, Lea Brothers & Co., 1898, **3**.
9. Richter: Charité-Ann., 1898, **23**, 365.
10. Lubinoff: Méd. mod., 1894, No. 1, p. 13.
11. Senator: Charité-Ann., 1893, **18**, 322; ibid., 1898, **23**.
12. Neumann: Spezielle Pathologie und Therapie, Vienna, 1899, **23**, 449.

going factors may be coincident. In view of the swelling of the liver, Mauriac[13] believes that the jaundice is due to an active hepatitis with hyperemia and stopping up of the biliary ducts. Finger[14] says that it is due to syphilotoxin. This is essentially the explanation offered by Fournier.[15] Still others ascribe the cause to a fear of the disease which manifests itself on the appearance of the secondary lesions. Talamon[16] has described an interesting case in a girl aged 17 in whom such a fear brought about an "emotional jaundice" within eighteen hours, followed in three weeks by death from acute yellow atrophy. He states that the emotional jaundice probably renders the liver more susceptible to the effects of the syphilotoxin.

Of far greater importance than mild icterus is the grave form, which often supervenes on the former, though it may arise insidiously with a stormy onset and rapid course. The tendency if untreated is for the condition to go on to acute yellow atrophy. In 1854 Lebert,[17] out of a collection of seventy-two cases of acute yellow atrophy, reported seven as associated with early syphilis. Tierfelder[18] found that eight out of eighty-one cases of acute yellow atrophy occurred in old or recent syphilitics. In Osler's Modern Medicine,[19] it is stated that 10 per cent. of all cases of acute yellow atrophy occur during secondary syphilis. Richter,[9] in 1898, collected reports of thirty-nine cases of syphilitic icterus gravis from the literature, and added two of his own. Umber[20] collected reports of fifty cases. In Michael's[6] analysis of forty cases of jaundice in early syphilis, four, or 10 per cent., went on to acute yellow atrophy. The condition seems to be much more common in women, the ratio being about 5:1. In 1894, Lasch[21] named the condition "icterus syphiliticus praecox," and many cases were subsequently reported under that title. In fifty cases reviewed by him, mercury had been administered in only three previous to the appearance of the icterus. Of thirty cases, the icterus occurred in twenty-five within three months after infection. In most of the cases reported in the literature, the icterus has occurred coincident with the exanthem. It may appear earlier. Practically all cases begin sometime during the first year of infection. Bendig[22] has recently observed a case similar to the one herein reported, in which the icterus occurred subsequent to the complete disappearance of the secondary syphilitic lesions under mercury rubs. He argues that it is not sufficient to cure the manifest lesions of the syphilis, for when these have disappeared, there is within the body, still present, the syphilotoxin.

The cause of grave icterus was carefully studied by Buschke and Zernik,[23] in 1911, who concluded that it was due to a syphilotoxic parenchymatous hepatitis and not an obstructive jaundice. This view was earlier put forth by Buraczinski,[24] and Vespremi and Kanitz,[25] and at present is generally accepted as correct. Other factors may sometimes play a rôle. Engel-Reimers[5] and others report cases in which pregnancy complicated the condition. Erichson's[18] case followed abortion. In Richter's[9] forty-one cases, a few were complicated with gonorrhea, others with sepsis. None had previous liver disease. Mercury does not play a part in the causation. Jaundice has been noted as occurring in the course of salvarsan injections, and a salvarsan icterus, often leading to death, is reported by Milian,[26] Rille,[27] Pinkus,[27] Klausner,[28] Arno Hoffmann,[29] Levy, Bing and Duroeux,[27] Dujardin[30] and Lube.[31] Milian,[26] who has studied these cases at length and reported several of them, has come to the conclusion that they are in no way due to the salvarsan itself, but that they are in the nature of hepaticorecidives, analogous to those occurring in the nervous system. In each case there results a lighting up of a syphilitic process in the liver and a resulting hepatitis which calls for more salvarsan, just as in the case with recurrences in the nervous system. The case of grave icterus which is described herein followed salvarsanization, but could not in any way have been due to the salvarsan, as it appeared abruptly four months after the last salvarsan injection had been given.

The symptomatology of icterus gravis is that of acute yellow atrophy, differing chiefly in the fact that it yields to specific treatment when recognized early. The onset is variable, generally insidious. A mild icterus usually appears as the first objective sign, occasionally accompanied by malaise, vomiting and constipation, but usually without gastro-intestinal symptoms. There may be a slight rise in temperature, though subnormal temperatures are often reported. The pulse is slightly accelerated. Severe abdominal pain may be complained of. Lumbago and muscular pain are common. There is often a debility similar to that of typhoid fever. This may go on to collapse. Cases are reported with ascites. While not a uniform finding, hemorrhagic symptoms are mentioned by many authors. These are manifested by gingivitis, bloody vomitus, melena, purpuric spots in the skin, and more rarely hemoptysis, hematuria and metrorrhagia. There is often a hemorrhagic nephritis. Pregnant women may abort, but this is not always the case.

The second stage is very definite in onset and is marked by a pronounced change for the worse in the general condition, by rapid decrease in size of the liver, the occurrence of leucin and tyrosin in the urine, and especially by the appearance of nervous symptoms. Headache appears which, if present before, becomes very intense. There may be pupillary disturbances and amblyopia. Mentality is affected. The patient may become depressed, or restlessness may supervene during which there are insomnia, pain, convulsions and delirium. The patient often screams and becomes very violent. Apart from the jaundice, the clinical symptoms may closely resemble meningitis. Partial paralysis, such as squint, has been noted. In Fournier's[15] case there was hemiplegia. Dyspnea may resemble the air hunger of Kussmaul. Constipation extends throughout the condition, and the dejecta are offensive. The patient finally dies in coma with complete relaxation of the sphincters.

13. Mauriac: Gaz. hebd. de méd., 1888, **25**, 564.
14. Finger: Die Syphilis und die venerischen Krankheiten, 1892.
15. Fournier: Traité de la syphilis, Paris, J. Rueff, 1906; Leçons sur la syphilis chez la femme, Paris, 1883, p. 926.
16. Talamon: Méd. mod., Feb. 13, 1897, p. 97.
17. Lebert: Virchows Arch. f. path. Anat., 1854, **7**, 385.
18. Cited by Richter (Footnote 9).
19. Osler and McCrae: Modern Medicine, Philadelphia, Lea & Febiger, **3**.
20. Umber: München. med. Wchnschr., 1911, **58**, 2499.
21. Lasch, O.: Berl. klin. Wchnschr., 1894, **31**, 906.
22. Bendig: Berl. klin. Wchnschr., 1908, **45**, 1229; München. med. Wchnschr., 1915, **62**, 1144.
23. Buschke and Zernik: Arch. f. Dermat. u. Syph., 1911, **106**, 121.
24. Buraczinski: Wien. klin. Rundschau, 1907, **21**, 651, 699.
25. Vespremi and Kanitz: Arch. f. Dermat. u. Syph., 1907, **88**, 35.
26. Milian, M. G.: Bull. de la Soc. franç. de dermat. et de syph., No. 7, July, 1914, to December, 1915; Ann. d. mal. vén., October, 1911.
27. Cited by Milian (Footnote 26).
28. Klausner: München. med. Wchnschr., 1911, **58**, 570.
29. Hoffmann, Arno: München. med. Wchnschr., 1911, **58**, 570.
30. Dujardin: Jour. méd. de Bruxelles, April 12, 1914, p. 182.
31. Lube: Deutsch. med. Wchnschr., 1914, **40**, 946.

The liver is probably enlarged in the onset of all cases, though this is not always easily made out. The enlargement is smooth, the right lobe being most affected. In one third of the cases the liver is tender. After a variable period, reduction in size comes on suddenly with the severe symptoms, and heralds a rapid fatal outcome.

At necropsy the liver presents the typical picture of acute yellow atrophy, often being reduced to one-third its normal size. The more slowly progressing cases show areas of acute yellow atrophy interspersed among areas of red atrophy, the latter representing earlier destruction. In some cases the entire liver is not affected, while in others not a single normal cell remains. Buraczinski,[24] Vespremi and Kanitz,[25] Fischer[32] and Bendig[22] failed to demonstrate spirochetes in the liver of cases at necropsy. Buschke and Zernik[23] injected the liver tissue into monkeys with negative results. The spleen is often enlarged.

The urine is diminished in amount and highly colored with bile pigment. There is no glycosuria. Small amounts of albumin often occur together with casts. Albumosuria is reported, and is supposed by some to come from direct destruction of the liver cells. Crystals of leucin and tyrosin are invariably present in greater or less amounts, often in so great an abundance that they spontaneously precipitate, but Rolleston[33] does not regard these as pathognomonic. On the other hand, Senator[11] Buschke and Zernik,[23] and others look on their appearance as evidence of beginning liver atrophy.

In some cases the stools contain bile pigment; in others they are clay colored.

There is no characteristic blood picture.

Unrecognized cases are invariably fatal. According to Richter,[9] the course is somewhat longer than that of acute yellow atrophy from other cause, the average duration being eighty-four days. Many cases are on record, however, as having ended fatally in less than two weeks. Precipitous cases are not uncommon. In one of Bendig's[22] reports a rather mild icterus with indefinite prodromal symptoms extended over three days, followed by a stormy exacerbation and death within twenty-four hours. With early specific treatment, the course may be arrested or retarded.

The older writers regarded the condition as always fatal. The prognosis, however, seems fairly good for recovery if the condition is recognized early and intensive specific treatment is begun. Isolated cures of advanced cases by salvarsan are recorded (Duhot,[34] Umber[20]).[35] Several cases of recovery have been reported (Senator,[11] Buschke and Zernik,[23] Lasch[21] and others) even after appreciable decrease in the size of the liver and the appearance of leucin and tyrosin in the urine. The condition should be diagnosed in the stage of enlargement. Purgation with calomel and intense mercurialization, either by injections or rubs, is indicated by most authorities.

During the past year a case of icterus gravis, occurring early during the course of syphilis and resulting in recovery, was under observation in the department of dermatology and syphilology at the university hospital.

The patient, a man, aged 38, married, salesman, entered the hospital for the first time, Dec. 11, 1915. At that time he had a typical chancre of the penis and a maculopapular rash over the entire body. He had been married fourteen years and was the father of four healthy living children. His wife had had no miscarriages. The patient had an attack of gonorrhea at the age of 17. Otherwise the past history was negative.

A sore had appeared on the penis in October, 1915, following a clandestine exposure about six weeks previously. The sore was painless and attended by slight discharge. It had been treated locally by the family physician. The patient had not noticed any glandular swelling. The eruption over the body had appeared one week previous to his entrance to the hospital. He had had slight headache for a few days, distinctly worse at night, and complained that he was not feeling as well as usual, although not definitely ill. He had received up to this time no antisyphilitic treatment.

The patient was found to be well nourished with no apparent loss of weight. There were numerous syphilitic papules on the scalp. On the forehead, over the body and on the upper portion of the extremities there was a diffuse maculopapular rash typically roseolous in character. On the right side of the penis at the corona was a typical chancre about the size of a dime with lamellar induration. On the right side of the tip of the tongue there was an involuting mucous patch. The superficial lymph glands were all enlarged. The superficial reflexes were very active and not markedly exaggerated. The spleen was not palpable. The blood Wassermann test was + + + +.

Ophthalmologic examination revealed marked edema and hyperemia of the retina—a low grade neuroretinitis, specific in type.

The neurologic examination revealed slight tendency to stagger with the eyes closed, and pupils which were somewhat sluggish. The lumbar puncture, however, revealed an entirely negative finding: 4 cells, albumin negative, Nonne-Apelt negative, spinal fluid Wassermann test negative. The department of otology reported syphilitic involvement of the eighth nerve.

December 14, the patient received an intravenous injection of 0.3 gm. of arsenobenzol, after which he suffered a marked Herxheimer reaction, the temperature rising to 102.8. This, however, was rapidly reduced on the following day. By December 17, the eruption over the body had disappeared and the primary sore was rapidly involuting.

A second and third injection of arsenobenzol, consisting of 0.4 and 0.6 gm., were given, December 20 and 27, respectively, from which the patient showed no reaction.

The patient said he felt excellent, December 28; the rash had entirely disappeared, and he was discharged from the hospital with instructions to continue his treatment in the form of mercurial inunctions.

April 22, 1916, the patient stated in a letter that he was not feeling well; that he tired easily; that his appetite was failing. He had lost considerable weight and had noticed that his eyes and complexion were becoming rapidly yellow. He was advised to return to the hospital for further observation, and appeared, May 2.

At this time the patient looked very ill. He was intensely jaundiced. The liver was markedly enlarged, extending about 4 finger breadths below the costal margin. The enlargement was smooth and fairly firm, the free border of the liver being rounded. The liver was tender to palpation.

32. Fischer: Berl. klin. Wchnschr., 1908, **45**, 905.
33. Rolleston: Diseases of the Liver, Gall Bladder and Bile Ducts, Philadelphia, W. B. Saunders Company, 1905.
34. Duhot: München. med. Wchnschr., 1911, **58**, 2113.
35. In addition to the references already given, the following will be found of interest:
Arnheim: Monatsh. f. prakt. Dermat., 1898, **26**, 436.
Brallet: Gaz. d. hôp., 1914, **87**, 1063.
Braunschweig: Med. Klin., 1911, No. 4, p. 137.
Brodfeld, E.: Med. Klin., 1912, No. 43, p. 1742.
Castaigne: Bull. de l'Acad. de méd., 1913, Series 3, **70**, 527.
Chauffard: Presse méd., Aug. 11, 1897, p. 69.
Fagge: Tr. Path. Soc., **18**, 136.
Goldstein: Wien. med. Wchnschr., 1904, **54**, 1862, 1918.
Hutchinson: Med. Times, 1876, p. 136.
Joseph: Arch. f. Dermat. u. Syph., 1894, **29**, 383.
Liebermeister: Deutsch. med. Wchnschr., 1893, **19**, 365.
Marchand: Beitr. z. path. Anat. u. z. allg. Path. (Ziegler's), 1895, **17**, 206.
Meder: Beitr. z. path. Anat. u. z. allg. Path. (Ziegler's), 1895, **17**, 173.
Melchior: München. med. Wchnschr., 1907, **54**, 2135.
Moxter, cited by Richter (Footnote 9).
Rosenberg: Deutsch. med. Wchnschr., 1912, **38**, 756.
Samberger: Arch. f. Dermat. u. Syph., 1903, **67**, 89.
Sevinoff: Thèse de Paris, 1913, Jouvre & Cie.
Stroebe: Beitr. z. path. Anat. u. z. allg. Path. (Ziegler's), 1897, **21**, 378.
Thurmwald: Wien. med. Wchnschr., 1901, **51**, 1379.

The spleen was markedly enlarged and firm, extending about 3 finger breadths below the costal margin. It was not tender. The stools were clay colored, the urine markedly tinged with bile pigment. There was a moderate degree of albumin and there were large numbers of granular casts. The temperature was 98.6, the pulse 100.

The patient was at once referred to the department of internal medicine, and during the course of his stay in the hospital was repeatedly seen in consultation with Professor Hewlett, the head of that department. The abrupt onset without gastro-intestinal symptoms, the enlargement of the spleen, the absence of fever, the intensity of the jaundice and the rapid increase in the size of the liver all pointed to icterus gravis occurring in the early months of syphilitic infection, rather than to a simple catarrhal jaundice. Added weight to this diagnosis was given by the associated nephritis.

The patient was placed under observation for six days, during which time no treatment was given. During this period he became progressively worse, was losing weight at the rate of a pound and a half a day, and a marked decrease in the size of the liver was noted from day to day. Calomel injections, 1½ grains intramuscularly, were now instituted with daily saline catharsis. The patient seemed somewhat improved after the first injection, the most marked effect of the mercury being a diminution in the amount of albumin and the number of casts in the urine. By May 15, the albumin had entirely disappeared from the urine, the stools had become bile pigmented and the jaundice was rapidly clearing up. From this time on, inunctions of 6 gm. of mercury daily were instituted to replace the calomel injections. May 18, the patient was given potassium iodid in increasing doses, beginning with 35 grains three times a day. The liver was still somewhat enlarged over the normal, but was no longer tender.

By May 26, the patient was discharged. At this time he was but slightly jaundiced; the icterus was clearing up rapidly; the liver was no longer palpable over the costal margin. The spleen had also receded to normal in size. He felt well. The urinary findings had entirely cleared up.

The patient reentered the hospital, Dec. 4, 1916, with a gumma involving the skin of the face and the submaxillary gland. The liver at this time was normal to percussion and palpation; there was no trace of jaundice. The examination of the urine was negative and the spleen was no longer palpable. Since his discharge from the hospital, and up to two weeks ago, when the gumma appeared on his face, the patient had enjoyed good health.

CHRONIC NEPHRITIS SIMULATING THE SYMPTOMS OF CEREBRAL NEOPLASM

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The symptoms of cerebral neoplasm may be so closely paralleled by other diseases as to make the differentiation very difficult until opportunity has been had for protracted observation and study. Chronic nephritis, for example, may cause all the symptoms of brain tumor. I have seen two such cases recently, and one of them presented so much difficulty of diagnosis that it seems to me desirable to record it.

The patient was an Irishman, aged 57, married, employed as a watchman. The symptoms for which he sought relief had existed about a year. The initial symptom was headache; the pain was principally in the left temporofrontal region. He attributed the pain to an injury which he experienced three years before when he had been knocked down by a bicycle, and had received a wound over the left eye which required nine stitches. Since that time there had always been sensitiveness over the left eye. When the headache began, it would last a few days, and then a considerable period of respite would follow. It gradually grew more severe, and more continuous, and now he is rarely free from it.

The second symptom to develop was vomiting. It began soon after the headache became severe. The vomiting attacks averaged perhaps once a week at first, and more when the headache became very severe. The third symptom to develop was disorder of vision. For years he had experienced occasional diplopia, to which he gave no attention. It is not apparent on what it was dependent. Six months ago when the vision began to fail he consulted a physician who made the diagnosis of beginning optic neuritis. Meanwhile he began to complain of some general weakness, and during the last two months there has been complete loss of copulative capacity. For the past ten years he has had slowness of urination. He rises once or twice at night to void urine.

Latterly, when the headache is very severe, he has felt giddy. There was no history of convulsion or of paralysis.

His symptoms, in brief, were headache, giddiness, occasional unsteadiness in standing and walking, nausea, vomiting, failing vision and general weakness.

The patient was plump, pale and anemic looking, and the facies was suggestive of nephritis cachexia. The pulse rate was 100, the systolic blood pressure 210, the diastolic 165. The arteries were not particularly thickened or rigid on palpation. The heart was enlarged, and its sounds characteristic of chronic vascular hypertonus, but there were no murmurs. The patient had many bad teeth, all bathed in pus, and roentgenoscopy revealed areas of apparent softening around many of them. The third molar on the left side extended into the antrum.

Examination revealed the motor system normal, except that the right lower extremity seemed somewhat weaker than the left, and there was distinct tremor of the extended fingers. The right knee jerk was slightly livelier than the left; the ankle jerks could not be obtained. The plantar jerks were flexor in type and there was no Babinski phenomenon. The abdominal reflexes were present and equal. The epigastrics were sluggish. The arm jerks were quite normal, and there was no digital reflex.

Examination of the eyes revealed slight irregularity of the pupils, the right being 4.5 mm. in diameter, the left 4 mm. They were circular, the reaction to light slightly sluggish, that to convergence good. There existed a considerable degree of ptosis, the result of old trachoma, but otherwise the mobility was normal. Examination of the fundi showed pronounced papilledema. It could not be accurately measured. The right disk was elevated to at least 5 diopters, the left about 3. Vision in the right eye with a plus 3 D. was brought up to $^{10}/_{200}$ and in the left eye to $^{20}/_{70}$. There was slight opacity of the right cornea, the result of old trachoma. The fields were complete.

Hearing in the left ear was not as keen as in the right. Examination of the left ear showed a mild chronic sclerotic thickening of the middle ear. The internal auditory apparatus was quite normal. The functions of each of the other cranial nerves were unimpaired. There was no disturbance of speech, and the various forms of superficial and deep sensibility were quite normal.

Examination of the blood serum and of the cerebrospinal fluid gave a negative Wassermann reaction, and there were no cells in the latter, but there was an excess of globulin. The fluid escaped through the needle under considerable pressure. Examination of the blood revealed a typical picture of a secondary anemia: the red blood corpuscles 4,936,000, hemoglobin 88 per cent., white blood corpuscles 6,200, polymorphonuclears 75 per cent, transitionals 4 per cent., large lymphocytes 18 per cent., small lymphocytes 2 per cent., and eosinophils 1 per cent.

Sugar tolerance was quite normal. The estimation of nonprotein nitrogen when the patient came into the hospital was 61,100 c.c.; two weeks later it was 52,100 c.c. The urine contained albumin and a few hyaline and granular casts.

During his stay in the hospital the most conspicuous symptom, in addition to the headache, vomiting and choked disks, was vascular hypertonus. The blood pressure fluctuated between 200 and 270, the systolic averaging about 230. A few days after entering the hospital he had an elevation of

temperature to 102 F. and symptoms of a cold. He developed profound dyspnea, but all the symptoms yielded very promptly to active purgation by calomel and salines.

The Roentgen examination of the skull showed a normal sella turcica, but the frontal and ethmoid sinuses and both antrums showed cloudiness.

The evidences of chronic nephritis were vascular hypertonus, polyuria, the findings of the urinalysis, the secondary anemia, the cachexia, dyspnea, headache, vomiting and the choked disks. The last named was the unusual symptom.

The patient was put on a lactovegetarian diet, made to drink 60 ounces of water slightly alkalinated by the addition of sodium bicarbonate, given 1/60 grain of calomel three times a day, and in addition to this he had hot blanket packs and carbonic acid baths on alternating days, and general massage. While he was taking this treatment the symptoms mitigated: the headache diminished in frequency and severity, the vomiting ceased, and his general strength and vitality showed decided improvement. He remained in the hospital three weeks and was then discharged. At the present time, four months after the treatment, his improvement still continues in every respect. The elevation of the disks has subsided but has not completely disappeared, and the ophthalmoscope shows now a fairly typical picture of retinitis albuminurica.

The symptoms of which the patient complained were the classical symptoms of brain tumor, or at least of increased intracranial pressure, and they developed in what may be called the typical way. Taking into conjunction the fact that they had their beginning somewhat more than two years after he received an injury to the skull, a thing not unusual in the history of brain tumor and considered important both as an exciting and a determining factor, it was almost imperative to give that diagnosis full consideration. Naturally it is quite within the grounds of possibility to have a neoplasm developing in a person who has chronic nephritis. In this case it is not necessary to assume such duality of disease, as the vasculorenal disease is quite adequate to account for all the symptoms, including the papilledema.

We accustom ourselves unconsciously to feel that choked disk means increased intracranial pressure incident to brain tumor, abscess, sinus thrombosis and fracture of the skull, and so it does in the majority of instances; but it should never be forgotten that it occurs in a score of other diseases: myelitis and disseminated sclerosis; infectious diseases, such as whooping cough and erysipelas; hemic disease, such as chlorosis, leukemia and scurvy; in disease the result of disordered internal secretion, and in states of intoxication such as from lead and quinin.

Although it seems to be a matter of common knowledge that choked disks occur at times in persons suffering from chronic nephritis, there is very little reference made to it in the literature, for instance, in the work entitled "Die Neurologie des Auges," by Wilbrand and Saenger. No reference is made to it in the volume entitled "Die Erkrankungen der Papilla Nervi Optici." Gowers, whose work on medical ophthalmoscopy, written a third of a century ago, is still a remarkably safe guide, does not mention it. Dr. James B. Herrick, writing on chronic nephritis in Osler's "System of Medicine," makes only casual reference to it, in the following sentence: "The severe headache (of chronic interstitial nephritis) accompanied as it often is with nausea, vomiting, dizziness and perhaps some mental disturbances, may resemble the symptom complex of tumor of the brain, especially when an inflamed and swollen optic disk is discovered." On the other hand, the occurrence of choked disk in chlorosis is referred to in the literature frequently. I have readily found references to it as far back as 1840, when Prael[1] published an interesting account of it. It may quite well be that the papilledema in cases of chronic nephritis may be incident to the secondary anemia of that disease. It is worthy of note that it has frequently been remarked that the cerebrospinal fluid comes out under pressure in cases of anemia attended by optic neuritis. In the case herewith described the fluid was under very considerable pressure.

If papilledema is the result of increased pressure of fluid in the vaginal sheath of the optic nerve, the pressure may in this case be the manifestation of edema, such as occurs in other parts of the body constantly in chronic nephritis. If we assume that this is the true explanation of the pathogenesis of the condition, the papilledema should subside under the use of measures which facilitate the disappearance of edema in other parts of the body. If, on the other hand, the neuritis is the result of the activity of toxic matter acting on the termination of the optic nerve, it is not likely that it will subside, for unfortunately we are not in a position to do the work of the kidneys artificially or vigorously.

37 West Fifty-Fourth Street.

DUODENAL ULCER AND TETANY*

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History.—A man, aged 28, complained of "stomach trouble," present periodically since boyhood, and progressively worse during the last few years. At first a hot drink gave relief. For the past year he had had sharp epigastric pain, irregular in onset, with no special relation to meals. If he retired early, however, the pain occasionally wakened him at midnight, that is, six hours after supper. If he was up late and ate on retiring, he usually slept until 3 or 4 a. m. Eating seemed to ward off the pain. He had had no nausea, vomiting, pain in the back, hematemesis or bloody stools. When in high school his weight was 182; it was now 158, of which he had lost from 10 to 15 pounds within the past year. Fifteen months before, the patient had been under the care of a physician who suspected ulcer, but on negative stools and roentgenograms, ruled it out.

The patient's hours of work in a small candy store were irregular: one week from noon to 11 p. m., and on alternate weeks from 8 a. m. to 6 p. m. This made his meals irregular. He ate considerable candy during idle moments.

Examination.—The patient was well developed and well nourished. He had small atrophic tonsils with a few cheesy crypts, no pyorrhea, many fillings, and no other areas of possible focal infection. There was no lymphadenitis. The abdomen was dull in both flanks, and the colon filled with palpable fecal masses. There was no tenderness or muscular rigidity. The urine was negative, except for a positive urobilin test.

Gastric contents removed forty minutes after a test meal and six hours after a breakfast containing prunes yielded 350 c.c., with free hydrochloric acid, 44; combined hydrochloric acid, 25; total acidity, 72; no gross or occult blood, and no remains of breakfast. It was otherwise negative. A second test gave 200 c.c., with free hydrochloric acid, 70; combined hydrochloric acid, 16; total acidity, 87, and otherwise negative.

Diagnosis.—Duodenal ulcer was suggested by the periodicity, hunger pain and hyperchlorhydria, though the absence

1. Prael: Monatschr. f. med. Augenh. u. Chir., 1849, **3**, 187-190.

* Read before the General Meeting of the San Francisco County Medical Society, Nov. 14, 1916.

of hemorrhage prevented an absolute statement. The absence of visible distention or peristalsis, as well as of food stagnation, as determined by test meals, seemed to exclude organic pyloric obstruction. The pain, itself, was thought to be due to pylorospasm with some retention after a full evening meal.

Treatment and Course.—The patient refused to go to bed, quit work, or have a Roentgen examination at this time, so that a Sippy treatment was impracticable. A diet of cream, cereal, vegetable purées, soft eggs, etc., was taken at short intervals, with powders containing calcined magnesia, soda and bismuth, midway between feedings. Regulation of hours and meals was insisted on.

Two months later the patient reported improvement, but complained of sharp pains in the chest at about 4 a. m. relieved by induced vomiting. The bowels were constipated. In addition to the former powders he was given capsules of belladonna, rhubarb, soda and cascara. Three weeks later he felt much improved except for some gastric distress at the same hour in the morning, still relieved by vomiting. His blood at this time showed: hemoglobin, 86 per cent.; differential: polymorphonuclears, 64 per cent.; mononuclears, 3 per cent., lymphocytes, 25 per cent.; eosinophils, 5 per cent., and basophils, 2 per cent. The stool was free from occult blood.

The patient still refused to enter a hospital or have a Roentgen examination, but finally a roentgenographic report was discovered of an examination eighteen months previous. At that time the roentgenographic diagnosis was: "No roentgenologic signs of gastric ulcer. Question as to duodenal ulcer. Difficult to give opinion on duodenum as the bulbus does not stay filled. Observations are, however, consistent with the clinical diagnosis of duodenal ulcer."

One month later and three and a half months after his first consultation, word was received that the patient was ill in bed. Vomiting had come on suddenly and was persistent. He was taken immediately to a hospital. Examination the same evening revealed that he was much thinner than when last seen. The abdomen was flat and somewhat retracted. There was a definite slight prominence in the epigastrium due to a distended stomach. No peristalsis could be seen. The Lenhartz treatment was instituted. On the following day he was perfectly comfortable, but that evening had an attack characterized by intermittent, bilateral, painful muscular contractions of the upper extremities, during which his hands assumed the typical tetany position. His stomach was washed, and 1,700 c.c. of greenish fluid removed, with relief of symptoms.

A test meal revealed: free hydrochloric acid, 10; total acidity, 30; no lactic acid; benzidin positive, guaiac negative. The urine contained albumin, indican, hyaline, granular and blood casts and red blood cells. With the patient standing, the stomach filled with water extended 2 inches below the umbilicus, with the upper border midway between the ensiform cartilage and the navel. The same position obtained on reclining. The stomach area was rather distended; no peristalsis was seen, though there was a question as to tetanic contractions of the stomach wall, first on the right, and then on the left of the median line. Trousseau's sign was present on the left side. Chvostek's sign, which was present in the preceding attack, was not now obtained.

The treatment consisted of a milk diet and calcium lactate in large doses.

Fluoroscopy, six and a half hours after bismuth ingestion, revealed a very small residue of bismuth in the greater curvature, which was considerably below the level of the pelvic brim. The examination was interrupted several times by attacks of tetany, the patient becoming rigid, the hands and arms assuming and remaining in the typical tetany position, and the abdomen retracted. This lasted for ten minutes without loss of consciousness, but with inability to speak. The stomach filled normally, the cardiac half delaying a few seconds. Very marked peristalsis was seen. The stomach at first assumed an hour-glass form, the division occurring one third of the way from the pyloric end. Examination was interrupted two or three times, but each time strong peristalsis was noted, and though the duodenal cap was readily seen, no bismuth passed into the intestine. The patient was then given atropin and again examined by the fluoroscope. No peristalsis was then observed and the stomach had flattened out, the bismuth being evident only in the greater curvature. When crackers were given, slight, barely visible waves of peristalsis were noted in the greater curvature, but none so definite as before the atropin administration. No defects could be determined in the substance or the outline of the stomach.

On the following day the patient vomited but once and had no tetany. The pupils were dilated. Trousseau's sign was easily obtained; Chvostek's sign was present. Schlesinger's leg phenomenon was not elicited. The tendon reflexes were normal. There was slight difficulty in starting the urine. There were no myotonic symptoms or so-called intention spasms. No peristalsis was seen in the abdomen. Stomach tympany apparently was somewhat higher. The blood pressure was normal. Blood examination revealed: hemoglobin, 120 per cent.; red blood cells, 5,940,000; white blood cells, 13,400; polymorphonuclears, 77 per cent.; lymphocytes, 10 per cent.; large mononuclears, 10 per cent.; degenerated, 3 per cent.

In another day the patient was much better, and no symptoms of tetany could be detected. In view of the apparent benefit following its administration, atropin was pushed to physiologic effect.

The patient was somewhat restless and mumbled in his sleep that night. He retained the nourishment and had no pain. Examination revealed moderate dilatation of pupils, and no peristalsis, distention or signs of tetany. Slight dermographia was present. Late in the afternoon the atropin effects had disappeared. The patient showed a tendency to doze, and when awakened made no effort to converse. Two days of decided improvement followed and he gained 1 pound in weight.

The patient progressed well until the morning of May 22, 1916, when he complained of a little nausea. Examination then revealed the stomach considerably dilated and peristalsis visible in large waves. The patient was nauseated, and lavage brought away a large quantity of food and fluid. In addition to lavage the treatment now consisted of a Lenhartz diet and increasing doses of the tincture of belladonna.

Two days later the patient vomited twice. Examination of the urine revealed: albumin, 0.5 per cent.; bile reaction, faint; hyaline, granular (fine and coarse) casts; also question as to blood casts; red and white cells. The treatment now was felt to be ineffective, and surgical intervention seemed indicated. The next day the patient had painless contraction of the hands and arms, and vomited in the afternoon. Myotonic phenomena, Trousseau's sign and Chvostek's sign were all present. The pupils were moderately dilated. The stools showed no blood. Examination of the urine revealed a faint cloud of albumin, no indican, no acetone, no diacetic, no urobilin and many hyaline casts.

On the following day the patient was delirious, cyanosed and mentally clouded.

Operation.—This was performed under novocain, gas and oxygen. Signs of chronic peritonitis were found. The stomach was in spasm, the finger barely passing the pylorus. No ulcer was found. Gastro-enterostomy was done. When the bowel was handled or exposed, an interesting condition was noticed. With an entire loop of small intestine completely collapsed, the adjoining portions would be normally distended with a clear line of demarcation between the two. After a few moments the dilated portion would collapse and the collapsed loop would expand.

The patient died on the day following operation. A partial necropsy showed the appendix free, containing a few small concretions, not ulcerated or inflamed. The liver, spleen and pancreas were normal. The gallbladder was normal, with no stones. The gastro-enterostomy wound was clean.

Pathologic Report (by Dr. J. V. Cooke).—"Thyroid gland is of normal size and appearance. On section it is reddish brown and there is no increase in colloid. The fibrous tissue is not increased in amount. The stomach has been opened and a portion cut away. The mucosa is negative. Just above the pylorus along the lesser curvature there is a pouchlike

dilatation 1 cm. in depth and 3 cm. in diameter. This is lined by mucosa and the wall slightly thinned. The pyloric ring is stenotic and just admits the tip of the little finger. On section there is fibrous tissue in the wall at this point and the consistency is firm and tough. No scarring is noted at this point. Immediately below the narrowing ring, there is a clean-cut, slightly elongated ulcer in the first portion of the duodenum. This measured 1 by 2 cm., and the base is of a greenish color. There is no perforation at this point, but the base of the ulcer is very thin:

"Microscopic Examination: Duodenum: Sections through the ulcer show a clean-cut peptic ulcer in the duodenal mucosa, extending through Brunner's glands. The base of the ulcer is composed of granulation tissue, which forms a rather thick layer at this point. A portion of the head of the pancreas, seen in the section, shows granulation tissue around it, and this granulation tissue can be traced to that at the base of the ulcer.

"Thyroid Gland: Sections show flat epithelial lining regular acini, which are filled with colloid. The interstitial tissue is not increased.

"Parathyroids: Sections show normal appearing cells of Type 1, the so-called principal cells. No eosinophilic cells (Type 2) are seen in the sections studied. There are no interstitial hemorrhages, nor is there any increase in interstitial connective tissue."

COMMENT

Here was a young man with a history suggestive of duodenal ulcer, with gastric hyperacidity as a sole objective finding. As he did not permit full investigation, medical treatment seemed justified until such time as better methods could be employed. No operative interference could be urged, especially in the absence of more definite findings. Many ulcers are cured by medical measures. Even very chronic ones may be benefited, if not cured, without surgery. The patient was next seen after one month with marked pylorospasm, gastric dilatation, vomiting and tetany. Immediate surgical intervention was considered. In a paper[1] on the treatment of gastric and duodenal ulcer written two years before, I said: "In cases of gastric tetany, operation should be performed as soon as the diagnosis is made, unless the stenosis causing it be due to spasm. Medical treatment is usually of no avail; surgery frequently relieves it immediately, or in a short while." On the other hand, we had known patients with supposed gastric tetany to get along without operation. One, a woman with a typical pyloric ulcer with periodic attacks of hunger pain, hematemesis, etc., had definite attacks of tetany with pylorospasm first in 1912 and again two years later. On both occasions she refused operation and recovered, at least so far as the tetany was concerned. Another woman with gastric dilatation and tetany lived for a number of years, only to die from chronic spinal disease. Rodman[2] reported a case in which tetany supervened eleven days after a perfectly satisfactory drainage operation had been performed.

Consultants and family in the case under discussion all favored medical measures. We could not promise a surgical cure, nor could we convince ourselves that the pylorospasm might not be part of the tetany.

According to Falta,[3] in a great number of cases of tetany, slight or severe disturbances in the function of the gastro-intestinal tract have been demonstrated. In one category of cases, tetany develops in persons who have long complained of the most diverse forms of gastric or intestinal affections, especially those in whom there is an associated high-grade stagnation of the gastro-intestinal contents. With the onset of the tetany, the gastro-intestinal symptoms may increase markedly. Abnormally rapid emptying of the stomach is occasionally seen with the Roentgen-ray screen. In some cases there is a marked pyloric spasm in the acute stage that leads to acute dilatation of the stomach.

It is probable that the tetany increases the pyloric spasm, or in many cases directly brings it about. Hourglass contractions have been observed during attacks of tetany in patients whose stomachs were apparently normal at other times and who never presented symptoms suggestive of ulcer. These belong to a second category, that is, those whose gastro-intestinal disturbances occur at or after the outbreak of the tetany, these disturbances being, as it were, but one symptom of the tetany.

In many cases the tetany promptly disappears when the stagnation is combated by thorough washing out of the stomach, if this can be borne. Many writers favor this line of treatment. Calcium, too, is often recommended. Munroe[4] writes: "It may at least be suggested that no patient should be operated on for dilatation until proper remedies have been used for balancing vagotonic and sympatheticotonic conditions." In this case both of the foregoing were tried. The result was apparently good—for a time. Atropin controlled the pylorospasm and allowed the stomach to empty better; it was therefore used, apparently with benefit—for a time. And then, after almost two weeks of observation, when we were most hopeful, there was a turn for the worse. As a last resort, consent was obtained to operate. "The operation was successful, but the patient died."

So, no doubt, it often has been in cases of gastric tetany.

In 1907 we saw a man, aged 26, enter the hospital with a history of recurrent attacks of pain and vomiting over a period of years, with a long record of gastric lavage and a recent onset of tetany. He was to have been "explored" the next day, but had an attack of tetany that night, fell on his head, and died. At necropsy no skull injuries were found, only a healed pyloric ulcer with stenosis and gastric dilatation.

CONCLUSIONS

1. Tetany may occur in cases of gastric dilatation associated with pyloric spasm or stenosis.
2. It may occur most unexpectedly, and in spite of fairly close observation.
3. The prognosis in any case of gastric tetany is bad.
4. The mortality is greater in cases treated medically than in those treated surgically.
5. It would seem wise to operate at once in the presence of symptoms of tetany of presumably gastric origin. The surgical procedure would depend on the lesions found.
6. Medical measures should be instituted after the operation.

350 Post Street.

1. Bine and Schmoll: The Treatment of Gastric and Duodenal Ulcer, California State Jour. Med., September, 1914.
2. Rodman, W. L.: Gastric Tetany, THE JOURNAL A. M. A., Feb. 21, 1914, p. 590.
3. Falta, Wilhelm: The Ductless Glandular Diseases, Philadelphia, P. Blakiston's Son & Co., 1915.
4. Munroe, J. P.: Chronic Tetany, THE JOURNAL A. M. A., Aug. 14, 1915, p. 599.

Improvement in Retarded Children.—That a child grades below the average by formal tests is not an infallible sign that he will never develop beyond the mental attainments of a child. An analogy is found in the retarded physical development of certain children.—Treadway, *Pub. Health Rep.*, Nov.

ABSCESS OF THE SPINAL CORD

WITH REPORT OF A CASE *

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DETROIT

Abscess of the spinal cord is so rare a condition, presents so irregular a clinical picture, and involves such interesting and difficult problems in diagnosis that this case has seemed to be deserving of full report:

A. J., man, teamster, was admitted to Harper Hospital, Sept. 28, 1916, complaining of a motor impairment of the left leg of twelve days' duration. The personal and family history were negative. Though five children had died at birth, only one living two hours, venereal disease was denied and the patient's Wassermann test was negative.

He had been a pretty steady user of alcohol, ordinarily drinking four or five bottles of beer daily, and on the Saturday night, twelve days prior to his admission, he had drunk more heavily than usual. About 10 p. m. of this day, he experienced a numbness in his left leg, and he could walk only with difficulty. The next day, he felt better but he limped for several days and then complained of pain in the left abdominal region. From then on, the motor impairment of the left leg had been progressively worse, necessitating a sidewise dragging of the left foot in his attempts to walk. The abdominal pain on admission was present only when he sat up or moved, and did not seem to be acute. Bladder control had been difficult for three days, and there was slight dribbling of the urine. Examination disclosed some pyorrhea alveolaris and also suppurating lesions of the hands which, he said, had followed the bite of a horse. There were no enlarged glands, and the epitrochlears were not palpable. The chest and the abdomen were practically negative, as also were tests of special sense. Sensory examination disclosed no changes in the arms, but over the abdomen were indefinite areas in which pain sense seemed diminished, and over the legs also pain sense was less acute than normal. Tactile sense was unimpaired. There was almost complete loss of motor power of the left leg, the right leg was unimpaired, and no other motor symptoms were noticed.

The arm reflexes seemed increased in activity, the knee jerks and the Achilles jerks were hyperactive, and clonus was easily elicited on both sides. There was no Kernig sign, there was a suggestion of a Babinski, and there was no ataxia.

The blood count revealed: white blood cells, 12,400; red blood cells, 5,120,000; hemoglobin, 90 per cent. The lesions of the hands yielded a culture of a staphylococcus.

September 30, numbness of the right leg complained of, and reflexes on both sides were elicited only with difficulty, response being very slight.

October 1, there was quite complete paralysis of the right leg as well as the left, and reflex response was hardly perceptible.

October 3, the reflexes were still less, there being a questionable clonic response at the left ankle, complete paraplegia, and there was analgesia from the level of the twelfth dorsal vertebra down. Tactile sense of the lower extremities was good, showing well marked dissociation of sensation. Abdominal, cremasteric, knee and ankle reflexes were absent. The pupils were equal and stiffly responsive. Roentgenologic examinations, October 3 and 7, were negative. The temperature curve was such as to point to the existence of some infectious process.

The analgesia remained for several days at the level of the twelfth dorsal vertebra, but later slowly ascended. The bladder was involved in the motor paralysis, and frequent catheterization was necessary. The blood count and the clinical course of the disease pointed to the existence of an infection involving the cord, and it was hoped that surgical interference might possibly reach and drain the infected focus.

October 7, laminectomy was done by Dr. A. D. McAlpine, the fifth, sixth, and seventh dorsal laminae being removed, the dura was incised, and the region carefully explored above and below but with negative results. The cord itself was not incised or explored.

October 9, there was anesthesia to the level of the nipples, and the arm reflexes seemed less active than normal. From this time on, there was little clinical change aside from gradual failure. Spinal puncture had yielded a turbid fluid, and from this a staphylococcus had been grown in culture.

There was progressive failure, a terminal bronchopneumonia, and cystitis. The patient died, 3:45 p. m., October 25. Lumbar puncture was at once repeated, and cultures from the spinal fluid yielded *Staphylococcus albus*.

Necropsy was done at 5 p. m. by Dr. Plinn F. Morse, pathologist. The body was slightly emaciated, but generally well nourished, still warm, showing a large gangrenous slough in the gluteal region, and the right heel threateningly black from trophic disturbance. The spinous processes and laminae of all the vertebrae were removed and the cord detached from below upward to the foramen magnum.

The cord, sectioned from above downward, showed macroscopically nothing of especial interest in the cervical region, but in the upper dorsal region, the anterior horns appeared increasingly injected as section proceeded downward. The lower seven inches of the cord showed the central portion filled with thick, creamy pus, this accumulation being broader in area as we proceeded downward—the tissue of the cord being much encroached on toward its terminus.

The results of further examination are given in the pathologist's report (by Dr. Morse):

"Sections of the cord taken from the dorsal region show complete degeneration of the posterior columns. Extreme edema at the entrance root zone, with a necrosis of the axial portion of the posterior nerve root. The blood vessels of the gray matter show marked round-cell infiltration. The rest of the cord at this level is fairly normal, except for edema. Sections taken at the level of greatest softening show complete disintegration of all the columns of white matter; complete disappearance of the anterior horn cells of the gray matter and, in general, complete necrosis of the cord as a whole. The posterior root ganglia in some areas show focal necrosis of the centers, and in regions contiguous to this, we find marked round-cell infiltration of the pia mater."

COMMENT

Difficulties of diagnosis were not few in this case. The rapid onset of the motor and sensory paralysis immediately following alcoholic excess at first suggested the possibility of a toxic cause, but later the clinical aspects of the case were such as conclusively to prove that the process was an infectious one. The dissociation syndrome, which persisted for several days, pointed to the probable involvement of the central portion of the cord, but this symptom had disappeared with further encroachment on the other tissues of the cord. The laminectomy still left us in the dark, the operating surgeon not deeming it wise to attempt even careful exploration of the cord itself. Several diagnoses were hazarded, but the clinical history seemed to point to an infection of the cord, which had at first encroached on the posterior columns and then involved a transverse myelitis at the seventh dorsal segment.

As to the possibility of reaching and draining such an abscess, Elsberg under recent date writes me:

Too bad that the cord was not aspirated, for the abscess could surely have been found and drained. I feel positive that the time will come when this will literally be done in these rare cases. Of course, there is no reason why an abscess of the cord could not be satisfactorily drained just as well as an abscess of the brain.

* Read before the Detroit Society of Neurology and Psychiatry, Feb. 1, 1917.

* On account of lack of space, this article has been abbreviated in THE JOURNAL by omission of a review of the literature. This will be included in the reprints, a copy of which may be obtained on application to the author.

Abscess of the cord is thus shown to be of rare occurrence and of irregular clinical picture, this depending largely on the level and extent of the myelitic process caused by the infection and the amount of destruction of cord tissue involved.

The case reported seems clearly one of metastasis from the suppurative lesions on the hands, a staphylococcic infection following the bite of a horse.

1501 David Whitney Building.

UNTOWARD RESULTS OF PROPHYLACTIC TYPHOID IMMUNIZATION

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BROOKLYN

In view of the great frequency with which typhoid vaccination is nowadays performed, and the comparative ease and safety of the procedure, I believe it is wise to bear in mind that untoward results may follow typhoid inoculation, as in the case herewith reported, with the idea, not of paralyzing activities in this direction, but that it is necessary to take proper precautions with patients who are inoculated with typhoid vaccine. I believe that patients who receive the vaccine should be instructed to go home and not to their vocations, where the sudden appearance of certain mental and nervous symptoms would jeopardize their lives.

History.—W. S., man, aged 24, was one of thirty-three senior students who presented themselves on the morning of Oct. 28, 1916, for the routine typhoid vaccination. He received the same as the other students, 500 million bacilli of the U. S. army strain, nonsensitized, and prepared in the usual manner. The same vaccine from the same bottle and the same technic were employed with this student as in the other thirty-two. The thirty-two students presented the usual signs and symptoms of reactions after typhoid vaccination. The patient, on the other hand, presented the following rather unusual symptoms:

Twenty minutes after the subcutaneous injection of the vaccine he felt weak all over the body, especially in the lower extremities. A sensation of chilliness and a dull headache set in. These symptoms were progressively becoming more severe, until one hour after the injection the patient began to shake violently over the whole body, and he had an unbearable throbbing headache. Then the rather unusual symptom of continuous vomiting set in. The vomitus was at first slimy mucus, and then mucus and blood, which was bright red. The soreness all over the body became extreme and the joints exceedingly painful. The temperature was 103, pulse 100 (normal 60). The vomiting, the painful joints and soreness all over the body persisted for forty-eight hours. He remained apathetic for forty-eight hours, during which time anorexia and polydipsia were marked. The stools were yellow and watery. The urine was red and contained blood. At the height of the illness the patient was in extreme collapse. The temperature continued high for seventy-two hours with slight morning remissions; it was about 101 in the afternoon. The pulse ranged from 90 to 96. There was no nose bleed. On the second day the spleen became palpable, and on deep inspiration was felt one finger's breadth below the free costal margin. The liver edge was palpable below the costal margin. The glands in the neck, axilla and groin were decidedly enlarged; those in the axilla were very tender. The convalesence lasted one week, the patient complaining of dull headache and severe pain in the bones of the legs.

The local reaction was very slight and consisted of redness and slight tenderness. The liver, spleen and lymphatic glands remained enlarged for one week and then gradually subsided. If the patient had suffered from a regular course of typhoid he could not have fallen away more or looked worse. He was exceedingly feeble.

Laboratory Findings.—In the urine there were large quantities of blood. The diazoreaction was negative; four tests were made; the first one on the fourth day after the vaccination. There were no other pathologic findings.

Blood examination before the vaccination revealed: total red cells, 4,900,000; total white cells, 7,800; differential count: polymorphonuclears, 74 per cent.; small lymphocytes, 20 per cent.; large lymphocytes, 3 per cent.; transitionals, 2 per cent.; eosinophils, 1 per cent. After vaccination (four days following injection): total red cells, 4,700,000; total white cells, 7,600; differential count: polymorphonuclears, 65 per cent.; small lymphocytes, 32 per cent.; large lymphocytes, 3 per cent.

The Gruber-Widal test on the fourth day after vaccination revealed loss of motility but no clumping.

In view of the severity of the reaction, the presence of blood in the vomitus and urine, and the general collapse which followed, it is hardly necessary for me to say that I did not give the patient the second and third injections.

The previous history of the patient was absolutely negative. He never had typhoid or any other disease. He is not subject to hives or any other rashes. He does not suffer from asthma or hay-fever. He does not present symptoms of anaphylaxis when around horses, cats or dogs. He is not sickened by eating shellfish or any other food with the exception of ice cream, which even in minute amounts sickens him, and the mere smell of it nauseates him. He has never before received typhoid vaccine. From the foregoing it is therefore difficult to determine what has sensitized him against the protein of the typhoid bacillus. I do not doubt for a moment that sensitization or anaphylaxis was responsible for the symptoms.

ENDEMIC INDEX OF MALARIA IN THE NORTHERN SACRAMENTO VALLEY, CALIFORNIA

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AND

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Although for many years malaria has been known to be prevalent in the great central valleys of California and the foothills adjacent to them, no systematic attempt has been made to study the types and endemicity of the disease prior to 1915. However, W. B. Herms,[1] associate professor of parasitology in the University of California and consulting parasitologist of the California State Board of Health, has done a large amount of educational and mosquito control work. Early in 1915, Dr. K. F. Meyer[2] and Dr. E. L. Walker, associate professors of tropical medicine in the George Williams Hooper Foundation for Medical Research, began an investigation in order to determine the endemicity of malaria and the types of mosquitoes involved. After several weeks this investigation was discontinued.

In September, 1915, after conferring with Professor Herms, we submitted to Dr. W. A. Sawyer, secretary

1. Herms, W. B.: Malaria, Cause and Control, New York, the Macmillan Company, 1913; Successful Methods of Attack on Malaria in California, California State Jour. Med., May, 1915.
2. Meyer, K. F.: Sources of Malaria in California, Tr. Commonwealth Club of California, San Francisco, 1916, **11**, 22.

of the California State Board of Health, a plan for the investigation of malarial conditions in the state. This plan, based largely on the malarial investigations made by the United States Public Health Service, included the taking of blood specimens from persons in several towns in both the Sacramento and San Joaquin valleys in order to determine the endemic index of malaria. We decided to take specimens from schoolchildren only, so that it would be possible to take a second set from persons of the same age and environment after control measures were instituted.

On account of other and more urgent investigations, this plan has not yet been completely carried out; but we wish here to report the findings at Orland, Glenn County, and Redding, Shasta County, both in the Northern Sacramento Valley. The population of Orland was 836 and Redding 3,572 according to the 1910 census. The accompanying tables give a comparison of the results found in the two towns.

The malarial index of 4.7 per cent. is low in comparison with von Ezdorf's[3] findings in some of the southern states: Alabama 11.4 per cent., Arkansas

TABLE 1.—FINDINGS AT ORLAND AND REDDING

Town	Number Examined			Infected Number			Types of Infection			
	Male	Female	Total Examined	Male	Female	Total Infected	Tertian	Quartan	Estivo-Autumnal	Percentage Infected
Orland	181	192	373	1	3	4	3	0	1	1+
Redding	228	207	435	21	14	35	17	1	17	8+
Totals	409	399	808	22	17	39	20	1	18	4.7

TABLE 2.—DISTRIBUTION BY AGES

Age	Orland			Redding		
	Examined	Infected		Examined	Infected	
		No.	Per Cent.		No.	Per Cent.
Under 10 years	171	2	1+	103	5	5—
From 11 to 15 years	139	1	0.7	158	21	13+
Over 15 years	63	1	1+	174	9	5+

10.1 per cent., North Carolina 7.8 per cent., South Carolina 11.9 per cent., Mississippi 31.2 per cent., and Virginia 9.3 per cent. However, several dissimilarities in the methods of determining the index must be taken into consideration. Specimens were taken by us from schoolchildren only and thin smears were used exclusively, while von Ezdorf took specimens from the general population and used thick as well as thin smears. Taylor[4] found only one-fourth as many positive specimens using thin as he did using thick smears, so it is possible that by using the latter method our positive findings might have been increased, though at least half an hour was spent in the examination of each smear before reporting it negative.

The relatively high percentage of estivo-autumnal infections is of interest, particularly in Redding, where the number of cases of this type was the same as the tertian. This is higher than the percentage reported by von Ezdorf, who found two tertian for every estivo-autumnal infection.

The finding of one quartan out of thirty-nine infections and 808 examinations may have been merely accidental, as von Ezdorf found only three out of 2,391 infections and 16,114 examinations. We[5] have already reported the finding of a district near Redding in which the quartan type of malaria was prevalent, and although the child, found to be harboring *Plasmodium malariae* by the present investigation, did not come from this district, it is very possible that she may have visited it at some time, as it is located only a short distance from the town.

In this investigation we found the percentage of carriers to be highest between the ages of 11 and 15, the percentage for this period being double that below 11 or over 15.

3. Von Ezdorf, R. H.: Endemic Index of Malaria in the United States, Pub. Health Rep., 1916, p. 819.

4. Taylor, H. A.: A Comparative Study of Thick and Thin Blood Smears for Diagnosis of Malarial Fevers, THE JOURNAL A. M. A., March 10, 1917, p. 771.

5. Geiger, J. C., and Kelly, F. L.: Plasmodium Malariae (Quartan)—A Type New to California, California State Jour. Med., 1916, **14**, 198.

Therapeutics

DISTURBANCES OF THE KIDNEYS

(*Continued from page 1258*)

UREMIA

The symptoms of uremia are the same, whether it is caused by acute or chronic nephritis. Ordinarily, when uremia is imminent, premonitory symptoms occur, such as severe headache, fulness of the head, dizziness and eye blurs, or "turning black before the eyes," as the patient describes it; there may be muscle twitchings, muscle cramps, restlessness, sleeplessness or drowsiness; there is often nausea, vomiting, and diarrhea—Nature's method of improving the condition. The blood pressure increases, and may be very high. The urine shows a decreased output of solids, especially of nitrogen, and the blood shows retained nonprotein nitrogen. The Babinski sign, as first pointed out by Curschmann,[109] is a prognostic sign of impending uremia, and probably occurs from the irritation of toxins on the cerebral centers. It is probable that in all cases of uremia, disturbances of the liver function play some active part. The liver forms urea out of ammonium salts. Exclusion of the liver in animals prevents the formation of urea, and death soon occurs, generally preceded by convulsions. When the liver function is disturbed by any disease, the poisons resulting from metabolism are not well detoxicated. Urea may be diminished in amount, and it has been suggested that ammonium carbonate remains in the blood, and that ammonium salts are irritant to the central nervous system. If the organic sulphates and indican are increased in the urine there may be an abnormal amount of substances circulating in the blood which are irritant to the central nervous system and which sooner or later cause disease.

It may also be well here to caution against the use of the urea test of kidney function in conditions in which uremia is feared. Twenty gm. of urea, which is the dose for a urea test, should normally be eliminated in one and one half days. In nephritis the excretion may be greatly delayed or the whole amount may be retained. Hewlett, Gilbert and Wickett[110] have recently shown that in normal persons the administration of considerable amounts of urea by the mouth may greatly increase the urea content of the blood and

109. Curschmann, H.: München. med. Wchnschr., Sept. 26, 1911; abstr., THE JOURNAL A. M. A., Nov. 4, 1911, p. 1576.

110. Hewlett, A. W.; Gilbert, Q. O., and Wickett, A. D.: The Toxic Effects of Urea on Normal Individuals, Arch. Int. Med., November, 1916, p. 636.

cause such symptoms as "headache, dizziness, apathy, drowsiness, weakness and fatigue," the very symptoms which are premonitory of uremia. This shows how little extra nitrogen waste will cause imbalance of nitrogen metabolism in nephritis, and is the reason that chilling, extra muscular exercise, a high protein meal, or nervous and mental excitation, such as may occur during an after-dinner speech, a lecture, or after a controversy, may precipitate a uremic attack. This fact is daily verified by newspaper reports concerning prominent public men. An attack may be precipitated apparently out of a clear sky, without forewarning edema or other symptoms of kidney insufficiency. Such precipitate uremia usually occurs with the so-called interstitial variety of nephritis, and is often fatal.

Uremia may occur in chronic nephritis when the pathologic condition is largely interstitial, without the presence of albumin and casts in the urine. Mild uremic attacks may not be fatal in chronic nephritis; all the symptoms of uremia may cease, and the patient may long be free from them, although ordinarily they will again recur until the fatal issue. In acute nephritis, even a severe attack of uremia with convulsions and coma may not be fatal, and the patient may completely and entirely recover. The prognosis, however, is always serious and generally dire; but one should never give up hope of saving the patient. However, when chronic nephritis has long been present and the patient has had repeated slight attacks of uremic symptoms, when true uremia finally develops the outcome is usually fatal.

A recent investigation by Chace and Myers[111] shows that increase of the uric acid in the blood is suggestive of incipient nephritis; that changes in the amount of urea in the blood in nephritis is a dependable indication of the condition of the patient, and that a large increase in the creatinin of the blood is of serious import, more than 5 mg. of creatinin in 100 c.c. of blood indicating an early fatal outcome, the creatinin content of the blood increasing rapidly just before death. Morse[112] has shown that the creatin is normally greatly increased in the urine after childbirth.

The symptoms indicative of uremia are: hypertension (a diastolic pressure of 120 is usually indicative of a serious kidney condition); headache (generally occipital or frontal); restlessness, or, sometimes apathy and somnolence; ringing of the ears; eye blurs; muscle twitching; cramps; coated tongue; nausea; vomiting; dry skin; odor of urine from perspiration and skin; dyspnea; finally, convulsions and coma.

The intensity of the foregoing symptoms varies, of course, with the degree of uremic poisoning, and the condition may frequently be aborted by proper treatment in its incipiency. When several of these symptoms develop in nephritis, active treatment must immediately be instituted. A diminished output of urine usually accompanies these symptoms, although this may not always be true in contracted kidney. The pulse may be slow, becoming rapid, as the severity of the symptoms increases, unless considerable cerebral pressure causes its retardation for a time. If the condition becomes serious, the pulse may become rapid and weak, and the blood pressure lower.

111. Chace, A. F., and Myers, V. C.: The Value of Recent Laboratory Tests in the Diagnosis and Treatment of Nephritis, THE JOURNAL A. M. A., Sept. 23, 1916, p. 929.
112. Morse, Arthur: Creatin and Creatinin Excretion During the Puerperium and Their Relation to the Involution of the Uterus, THE JOURNAL A. M. A., Nov. 6, 1915, p. 1613.

Examination of the blood usually reveals an increase of nonprotein nitrogen in nephritis as uremia develops, but it should be noted that this increase has also been found in cholera and typhus fever. Foster[113] found that uremia and death may occur when the nonprotein nitrogen of the blood is not increased.

The exudates in nephritis have been shown to contain the same amounts of nonprotein nitrogen as the blood; hence, when in uremic patients an increased amount of water is lost by the bowels, by the kidneys or by perspiration, these fluid exudates are apt to be absorbed, and serious uremic symptoms may again appear as a result of the increased nonprotein nitrogen and other toxins in the blood. When uremia and finally coma occur without convulsions the amount of retained nitrogen in the blood has probably not been greatly increased since the more retained toxins there are in the blood, the more probable is the occurrence of convulsions.

Foster found that ammonia-nitrogen may or may not be increased in uremia, but that it is usually increased in convulsive cases and in those cases with a high total nonprotein nitrogen. Normally there is less than 0.5 mg. of ammonia-nitrogen in 100 c.c. of blood. The greatest increase of ammonia-nitrogen in the blood is found in diabetics and in diabetic coma.

Folin[114] found that the uric acid of the blood is increased in renal disease, while Foster found that the purin nitrogen is increased in nephritis, most markedly in those who have contracted kidney; in uremia it is twice the normal amount.

Corroborative of the findings of Foster that occasionally uremia may occur without an increase in nonprotein nitrogen in the blood, Strauss[115] terms a condition "pseudo-uremia" in which the nitrogen retention is not great and the blood tension may not be high. These patients have a tendency toward convulsions and coma; the condition is closely allied to puerperal eclampsia. Convulsions, occurring when the kidneys are not apparently seriously insufficient and the nonprotein nitrogen of the blood is not increased, point toward acidosis, and future investigations may show that the ammonia-nitrogen of the blood is increased.

(To be continued)

113. Foster, N. B.: Uremia, Arch. Int. Med., March, 1915, p. 356.
114. Folin: Jour. Biol. Chem., 1914, **17**, 489.
115. Strauss: Berl. klin. Wchnschr., April 12, 1915.

Occupation Therapy.—Susan E. Tracy, R.N., of Jamaica Plain, Mass., is given credit for having emphasized the value of occupation for convalescents in aiding recovery, in adding to the sum of happiness of the shut-ins and perhaps in placing many in the way of earning a livelihood. In 1798 Dr. Benjamin Rush recommended occupation for the mental defectives in the Pennsylvania hospitals. Its value as applied to the convalescents in general hospitals has not been recognized. Only within recent years has any effort been made in the direction of providing such occupation. Miss Tracy has developed her ideas during a period of the last ten or fifteen years since her graduation as a nurse, delivering her first lectures to the senior class of nurses in the Massachusetts General Hospital in 1911. The Maryland *Psychiatric Quarterly*, January, 1917, is devoted to a sketch of Miss Tracy and her work, with an article by her detailing her experience in establishing occupational teaching among the convalescents and the nurses of the Michael Reese Hospital, Chicago, in which institution it has now become a definite part of the hospital routine and of the nurses' training course. As has been said by Miss Tracy, this is peculiarly nurses' work. Even beyond the remedial and alleviating values of this branch of nursing, there are almost limitless possibilities for education and for human salvage.

Special Article

THE MEDICAL OFFICER OF THE ARMY

III

ARMY REGULATIONS AND EQUIPMENT

The government of the army is outlined by revised statutes. These are laws passed from time to time by the Congress of the United States to suit the changes and progress in military affairs. Under these laws and as an interpretation of these laws, we have the army regulations. These regulations are fairly numerous and are printed in book form for distribution to the army at certain regular intervals. Naturally, changes are frequently occurring, and once every month is published a pamphlet containing the paragraphs which have been revised during the month printed in their revised condition.

Absolute slavish following of army regulations is not intended. In certain instances in which expenditures of money are provided for, the details are to be followed; but as a rule the spirit behind the regulation governs, and the wording is of only a general character. Laws governing the personal life of officers and men are embodied in the articles of war which represent the criminal code of the military service. These articles have recently been revised, and from a legal standpoint are considered effective and up to date. Court martial procedure is outlined in this law, and crimes and misdemeanors with their penalties are shown. The Supreme Court of the United States has decided that if the military authorities take cognizance of a criminal case first and take steps to prosecute the offender, this procedure takes precedence over the civil courts, and the case will be tried in the military courts and punishment effected as a court martial shall direct.

The regulations are carried out and laws are promulgated by means of orders. These are of two classes: one known as "special orders," which concern the individual officer or man, and the other known as "general orders," in which instruction of a general character necessary for the entire command is issued. Information of general interest to the army as a whole is issued in the form of a bulletin. The latter class includes the text of laws passed or the decisions of the judge-advocate-general and the auditor of the war department.

CUSTOMS OF THE SERVICE

In addition to the printed regulations as outlined, we have the customs of the service; these are of considerable importance. They are the unwritten law of the army, though not pertaining as a rule to very important subjects, still the life of the army is to a certain extent governed by these customs. They are numerous and cannot be outlined at this time, but an example can be given: When a visitor is present in the house of an officer or an enlisted man in an army garrison, the surgeon of the post treats that visitor when sick without charge under the same conditions which authorize him to treat the families of officers and men, though there are no written regulations covering the subject.

MILITARY DISCIPLINE

Military discipline is a subject which is poorly understood in civil life and may be defined as the state of mind which causes a soldier to respond immediately to the orders of his superior even in the face of great danger without once hesitating to think about the order. The lack of this state of mind is illustrated when untrained troops are placed in the line of battle, and though they may be individually brave they cannot stand before the onslaught of the enemy because they are not taught to obey implicitly the orders of their officers, and hesitate, weighing in their own minds the question as to whether they should stand or retreat. To obtain this state of mind, long training is necessary, and this training is carried out under what are considered by the average civilian as rather peculiar methods. In the first place, what would seem exaggerated respect to their superior officers is inculcated in all officers and men. The little forms of address which are usually classed as military in nature are constantly used, and respect is given promptly and without reserve, not so much to the wearer of the rank insignia but to that rank itself. Furthermore, drill in close order is indulged in for hours at a time, and from the knowledge learned during the present European war, every man knows that this drill would not be used on the battlefield. Why, therefore, should so many hours a day be given to something which is useless from that standpoint? It is carried out simply to accustom the men to obey quickly and implicitly the orders given them by their superiors without once stopping to question their advisability. All work of a military character must be directed by the leaders of a command, and the junior officers and enlisted men should obey at once orders given them, for the responsibility rests not on their shoulders but on the shoulders of those in higher command.

MILITARY HONORS

Military honors are important, not only from the standpoint of an exercise in courtesy and in respect due to the position held by the individual, but also to show respect to the flag and the country which it represents. At retreat when the flag is lowered and the "Star Spangled Banner" played, every officer and man within sight of the flag or in hearing of the music stands at attention, facing toward the flag, salutes at the first note of the anthem, and retains the position of salute until the last note of the anthem.

The hand salute is not only required from the enlisted men when they pass or address an officer, but is also required from officers when passing or addressing their superiors, and any salute given, whether by an enlisted man or an officer, must be returned promptly by the person saluted. The technic of the salute may be thus described: The right hand is raised smartly to the brim of the hat, thumb and fingers extended and joined forearm extended at an angle of 45 degrees, hand and wrist straight. The hand is held a moment in this position and then returned smartly to the side.

Salutes by cannon are also required in the military service, and in the regulations there is a list of all officers, civil and military, who are entitled to this salute. The largest number of guns given as a personal salute is twenty-one for the President of the United States. This salute is fired when the person entitled to it arrives at the camp or station. There are also certain official courtesies required of all officers. The one which a reserve officer will be most frequently called on to observe is the official visit to the commanding officer of the post, regiment or other organization to which this officer is temporarily or permanently connected. He reports his arrival to the adju-

tant and then proceeds immediately to the office of the commanding officer and makes his official call. This call is also required whenever a visit is made to a post, whether it is for official or for personal reasons. A call is also required to be paid at the house of the commanding officer.

CEREMONIES

The principal ceremonies which are held in a military command are parades and reviews. These are held not from the desire to make a show but from a strictly military reason. In holding such formations, the officers and men are encouraged to keep their clothing, arms and accouterments in perfect condition. This work is also assisted by inspections of the command, whether a company, battery or other military organization. These inspections, following army regulations, are held regularly every Saturday morning, and should be very thorough in character. The equipment of the men is carefully gone over and its condition verified in the minutest degree. By this means the commander is assured that his troops are well equipped for service at all times and that their equipment is kept in perfect condition. On the last day of each month, muster is held. This ceremony, which consists in the parading of the entire force and a calling of the roll in the presence of the organization commander, is an old one, and dates back from the beginning of our service. No man may be paid unless his name appears on the muster roll.

RANK AND INSIGNIA

Military rank is necessary in every military organization. To obtain the respect of the enlisted men in any army, the officers, whether line or staff, should have appropriate rank. This is not only necessary for the officer who commands the men in the line but also for any person above the grade of enlisted man who comes in intimate contact with the soldier. The dental surgeon or veterinarian has no men to command, but he comes in intimate contact with the men and, being given military rank, requires and receives the respect of the men.

The grades of officers in the service, whether in the staff or in the line are: second lieutenant, first lieutenant, captain, major, lieutenant-colonel, colonel, brigadier-general and major-general. The insignia of these ranks is as follows: the second lieutenant has no insignia on the shoulder of his service uniform, but all officers have around the cuff of the blouse a band of braid ½ inch wide. On the collar the officer also has the U. S. on both sides, followed by the insignia of the staff corps or branch of the line to which he belongs. The enlisted man, on the contrary, has on one side of the collar a round badge with the U. S. in raised letters on it, and on the other side the same badge with the corps insignia on it. The first lieutenant in addition to the insignia shown above has on each shoulder one silver bar; the captain, two silver bars, the major, a gold leaf; lieutenant-colonel, a silver leaf; colonel, a silver spread eagle; the brigadier-general, a silver star, and the major-general two silver stars. When the blouse is not worn, the insignia is placed on the shirt collar thus: on the right side the letters U. S. and the insignia of rank; on the left side the insignia of the corps or arm of the service.

The rank next to private with the enlisted men is corporal; next there is the sergeant and first sergeant of a company; the battalion sergeant-major is the ranking noncommissioned officer of the battalion. The regimental sergeant-major is the ranking noncommissioned officer of the regiment. In addition to this there are the chief musician, two color sergeants, a supply sergeant, and the hospital sergeant. The grades of noncommissioned officers in the staff corps are similar up to the rank of first sergeant. This rank in the staff is designated as a sergeant first-class. The higher grades of the staff corps are fairly numerous, and the highest grade is similar to that of the master hospital-sergeant of the Medical Department. The insignia to designate the noncommissioned officer is worn on the sleeve of his blouse or shirt, and consists of what are called chevrons. These chevrons are sewed on the blouse with the point upward, and with the staff corps the corps insignia is placed below the chevron; but with the line there is no designation of their branch of the service. The corporal has two chevrons; the sergeant three; the first-class sergeant three with a bar connecting the ends of the chevrons; this bar is an arc of a circle and does not go straight from one end to the other. The hospital-sergeant has two bars across below the chevron; the master hospital-sergeant has no chevron but a wreath surmounted by the corps insignia and a star.

The uniform required for all officers is: a woolen olive drab blouse and breeches (in summer, cotton olive drab is used, and several pairs of breeches of this cloth should be obtained so that they can be washed frequently); two olive drab flannel shirts; serviceable shoes, preferably the army pattern; leather puttees; campaign hat and cord; proper rank insignia, and a black necktie for the shirt.

FIELD EQUIPMENT

The field equipment of officers of the medical corps is as follows: the bedding roll, which is a piece of canvas of suitable size in which the bedding can be rolled for ease in transportation and protection from the weather. This roll is usually held together by a pair of straps. Two blankets: these blankets may be obtained from the quartermaster's department. A clothing roll can be obtained from the quartermaster's department. This is used to carry the clothing of the officer and any small articles which he may desire to have with him. It is of canvas provided with pockets and straps, and can be rolled up in a compact bundle and carried by a handle which is attached. If serving with troops, it is necessary to have a shelter tent, which is obtained from the quartermaster's department. Under these circumstances the first-aid packet and pouch, meat can, fork, knife and spoon, and water bottle are needed, and can be obtained from the ordnance department with the exception of the first named, which is furnished by the Medical Department. On joining a command each officer is provided with an identification tag attached to a tape, and it is required that this identification tag be worn all the time. Each officer should provide himself also with notebook and pencils and a serviceable watch.

A mounted officer below the grade of major is furnished with horse equipment by the government free of charge, and if necessary a horse is also provided for his use. If he should desire to buy a horse he is entitled to $150 additional pay per year. If he owns two horses he receives $200 additional pay per year. An officer of the grade of major or higher is required to furnish his own horse and horse equipment.

(To be continued)

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SATURDAY, MAY 5, 1917

THE TIME HAS ARRIVED FOR ACTION. PHYSICIANS, ESPECIALLY THE YOUNGER MEN, WHO HAVE BEEN DELIBERATING AS TO WHETHER OR NOT THEY SHOULD OFFER THEIR SERVICES TO THE GOVERNMENT SHOULD DECIDE NOW. STOP DELIBERATING AND ACT. NOT THAT THERE IS AN IMMEDIATE NEED FOR YOUR SERVICES, BUT THERE IS AN IMMEDIATE NEED THAT THE GOVERNMENT SHOULD KNOW ON WHOM IT CAN DEPEND SO FAR AS ITS MEDICAL OFFICERS ARE CONCERNED.

ACHIEVEMENTS OF THE MEDICAL CORPS OF THE UNITED STATES ARMY

In the May number of the *Scientific Monthly* Colonel C. C. McCulloch, librarian of the Surgeon General's Office, publishes an interesting and detailed record of the scientific and administrative work of the Army Medical Corps, which is all the more timely and opportune in that our military establishment is now in need of capable young physicians and surgeons, who, whether in the regular Medical Corps or the Reserve Corps, are ready to serve their country at the present hour. To the young man who is minded to take this step, such a record ought to be a stimulus to patriotism and an incentive to ambition, for in few branches of activity have more opportunities for achievement been offered and utilized than in the work of the Army Medical Corps. Here, the right man in the right place can always "do things."

From the times of the Iliad and the Anabasis, the army surgeon has always been a foremost figure in military affairs, not always recognized, it is true, but usually "winning out" in the end. Machaon and Podalirius, Paré and Wiseman, Larrey and Letterman are in every way as familiar names in medical literature as Achilles or Hector, Condé or Cromwell, Napoleon or Grant in epic or history. Pringle, whose name is associated with the establishment of the Red Cross idea at the battle of Dettingen, was not only the founder of modern military medicine, but also one of the most discerning physicians of his time. He was a pioneer of hospital ventilation, camp sanitation and antisepsis, showed the identity of jail (typhus) fever and hospital fever, brought the dysenteries into one category, and named influenza. John Hunter was surgeon general of the English army. Guthrie and Sir Charles Bell operated at Waterloo. Larrey and Letterman standardized rapid transportation of the wounded from the field. MacCormac and Victor Horsley were pioneers in vesical and neurologic surgery. The army surgeons of the Indian Medical Service shouldered a large part of the actual administration of Hindustan in the early days. They introduced and operated the telegraph lines, officered and ran the mint, acted as postmasters of the Indian stations, took the first census, improved the water supply, botanized and geologized over the whole peninsula, as portly volumes show, described the animals, poisonous snakes, minerals, costly woods and art products, wrote poems, translated Oriental texts, and added enormously to the science of tropical medicine. The names of Fayrer, Murchison, Russell, Waring, Ronald Ross, Leonard Rogers, Leishman, Donovan, and Vandyke Carter stand high in these annals.[1] Freyer improved the surgery of the prostate. Smith and Elliot have done much for the surgery of the eye. In the German army, the Langenbecks, von Graefe, Sr., Dieffenbach, Stromeyer, Helmholtz, Cohnheim, Loeffler, von Behring and Unna all had honorable records. In France, Laveran has written large treatises on military hygiene, and Tuffier at present manages the general surgery of the whole French line. Pirogoff, the great war surgeon of the Crimea, is the most eminent name in Russian medicine.

Colonel McCulloch's record goes back to colonial days, gives a full account of the work of the surgeons general, from Morgan to Gorgas, and enumerates the scientific work of the different medical officers in detail. The early names of Morgan, Rush, Shippen, Thacher and John Jones are well known. Morgan and Shippen were the principal founders of the medical department of the University of Pennsylvania (1765). William Brown, physician general of the Middle Department (1775-80), got up the first American pharmacopeia (1778). Of the early surgeons general, Tilton, Lovell (the patron of Beaumont) and Lawson were capable administrators. Hammond made his mark as physiologist and neurologist, founded the Army Medical Museum (at the instance of John H. Brinton), and during the Civil War created the special hospitals for cardiac, pulmonary and neural diseases, at which Da Costa first described irritable heart in soldiers, and Mitchell, Morehouse and Keen those gunshot disorders of nerves which Marie and his co-workers in Paris are now studying with such keen interest. Under Barnes, Crane, Murray and Moore, the medical and surgical history of the war was begun and completed by Otis, Woodward, Smart and Huntington. Under Barnes, John S. Billings made his famous reports on barracks and military hygiene, and began his remarkable career as hospital constructor, library adminis-

1. Crawford, D. G.: A History of the Indian Medical Service, 1600-1913, London, 1914.

trator, statistician, sanitary engineer and medical bibliographer. The "Index Catalogue" and "Index Medicus," founded by Billings and Fletcher, are known everywhere. Surgeon General Sternberg was the earliest of the corps to take up bacteriology; he first isolated the bacillus of pneumonia, cleared the ground for the work of Walter Reed and his associates on the transmission of yellow fever, and founded the Army Medical School. O'Reilly created the Medical Reserve Corps. Torney, who managed the work of medical relief and sanitation at the San Francisco earthquake and fire, reorganized the dental and nurse corps of the army and instituted compulsory vaccination against typhoid fever. The work of Gorgas in eradicating yellow fever from the Isthmus and rendering Panama habitable is the outstanding achievement in public sanitation of our time.

Among the individual medical officers, William Beaumont made an epoch by his work on gastric digestion, Letterman, by his work on ambulance evacuation of the wounded and general reorganization of the medical service in the field, Walter Reed by his demonstration of the transmission of yellow fever by the mosquito. Reed, Vaughan and Shakespeare showed how typhoid fever is transmitted in camps, and Major Russell eradicated the disease from the army by wholesale vaccination. Smallpox and leprosy were driven from Porto Rico by Colonel Hoff, and hookworm infection by Major Ashford. Captain Vedder diminished beriberi in the Philippines, and first showed that emetin is a specific in amebic dysentery. Major Craig demonstrated malaria carriers, also intracorpuscular conjugation as the cause of latent and relapsing malaria, and discovered *Paramoeba hominis*. Majors Ashburn and Craig discovered *Microfilaria philippinensis* and showed that the filterable virus of dengue is transmitted by the mosquito *Culex fatigans*. Captains Gentry and Ferenbaugh showed the transmission of Malta fever by goats in Texas. That wound infection may be conveyed by gunpowder or projectiles, in spite of the heat of the act of firing, was demonstrated by Colonel L. A. La Garde, whose treatise on gunshot wounds is now of especial importance. The Medical Corps of the Army has turned out a large number of admirable textbooks, such as those of Tripler, Woodhull and Straub on military medicine, Munson and Havard on military hygiene, Christie on Roentgen-ray diagnosis, and Munson on sanitary tactics. Colonel Munson, the present editor of the *Military Surgeon*, is the inventor of the Munson last, which has made the soldier's shoe absolutely comfortable for marching purposes. Outside the medical sciences, Coues, Merrill, Shufeldt and Mearns have distinguished themselves in ornithology, and Matthews and Woodruff in ethnology, and to the line of the army, the corps has contributed Generals Wood and Ainsworth. Altogether, a brilliant record, which, if surpassed by the work of the Indian Medical Service in versatility, is, as McCulloch says, unequaled anywhere in preventive medicine.

YOUR COUNTRY NEEDS YOU; ARE YOU SO SITUATED THAT YOU CAN RENDER ASSISTANCE?

PREPARATIONS OF THE PITUITARY GLAND

The importance of the standardization of preparations of the posterior, or infundibular, lobe of the pituitary gland (the liquor hypophysis of the new United States Pharmacopeia, pituitary solution, pituitary extract, etc.) is exemplified by a recent publication of Roth.[1] As is well known, the active constituent or constituents of this gland have not been isolated, and there is no chemical method of determining the activity and therapeutic value of various preparations. There are, however, certain physiologic methods by which the activity of such preparations may be determined with a considerable degree of exactness. The last revision of the Pharmacopeia, recognizing that the best attested field of usefulness for such preparations is in obstetrics, adopted as a test their activity on the uterus of the guinea-pig; the details of the method adopted by the Pharmacopeia are those described by Roth.[2] Roth now reports on the activity of seven samples of commercial infundibular extracts, the products of five American manufacturing pharmacists. Four of these samples were found to be of Pharmacopeia strength; the other three were much weaker. Of the latter, one had but one tenth, another but one fifth and the third but one fourth of the required activity. Those preparations which had been accepted by the Council on Pharmacy and Chemistry for inclusion in New and Nonofficial Remedies corresponded to the Pharmacopeia requirements. Roth also compared the activity of these seven preparations on the blood pressure, another method by which it has been proposed to standardize infundibular extracts. The four preparations which were equally active on the uterus were found to be equally active on the blood pressure; the other three were much weaker. Roth points out, however, that the results of the two methods are not necessarily parallel; in one instance, for example, two samples caused equal rises of blood pressure, but one was twice as active as the other on the uterus. Hence it is evident that the blood pressure test is not a satisfactory method for determining the activity of a preparation on the uterus, and vice versa.

The subject of pituitary standardization, or perhaps it may be said the application of the present method is, however, in need of further study. Thus the state-

1. Roth, G. B.: Pituitary Standardization, Bull 109, Hyg. Lab., U. S. P. H. S., 1917.
2. Roth, G. B.: Bull. 100, Hyg. Lab., U. S. P. H. S.

ment has recently been made[3] that commercial preparations are on the market which have from three to five times the activity of the Pharmacopeia standard; this was not the case, however, with the preparations examined by Roth. It is probable that some have used for comparison a weaker standard than that proposed by the Pharmacopeia; this, of course, would lead to the conclusion that the commercial preparations were stronger than the Pharmacopeia standard. Roth suggests that the employment of standards of unequal activity by the various supply houses could easily be eliminated by having a central laboratory distribute material for use as a standard. It will be recalled that before the United States Public Health Service established and began the distribution of standards for diphtheria and tetanus antitoxins, the commercial preparations of these varied even more in activity than do those of the pituitary extracts at present.

It is unnecessary to emphasize the importance of this subject; this is sufficiently evident to those who have followed the recent clinical literature on the use of pituitary extracts in obstetrics. These preparations are used in times of emergency; a weak preparation is valueless, whereas overdosage, either from too strong a preparation or from too free use of a preparation of the official strength, is often followed by disaster to the mother or child or both. Roth cites a number of cases of ruptured uterus and other injuries resulting from their use.

ARE YOU PHYSICALLY AND MENTALLY QUALIFIED TO ACT AS A MEDICAL OFFICER IN THE ARMY?

NEPHRITIS, BLOOD PHOSPHATES AND ACIDOSIS

There is no longer much doubt that in the more severe types of chronic renal disease mild grades of acidosis frequently occur. This manifests itself in a lowered alveolar carbon dioxid tension, decreased affinity of hemoglobin for oxygen, reduced alkalinity of the blood, increased intensity of urinary acidity, and retention of alkali by the body in cases in which the kidney is capable of the rapid elimination of excess of alkali.[4] It is well known that the acidosis itself can be overcome by the administration of alkalies. This does not, however, aim at the underlying causes of the excess of acid in the body. Even in normal metabolism there is a continual production of acid substances. These combine with base in the blood and are transported to the lungs and kidneys for excretion. Carbon dioxid is eliminated by the lungs. It devolves mainly on the kidneys to excrete sulphuric acid, phosphoric acid, and those products of deranged metabolism, aceto-acetic acid, beta-oxybutyric acid, etc., which are most commonly thought of as sources of the acidosis of disease.

There are many reasons for believing, however, that acidosis is by no means always identical with what has been termed ketosis or ketogenesis. Marriott and Howland[5] have recently demonstrated that an accumulation of acid phosphates may occur in the blood when the kidney functions are upset. The significance of this will be appreciated when it is recalled that the regulation of the acid-base equilibrium of the body is largely brought about by the ability of the kidney to excrete acid phosphate. This regulation of reaction is one of the most important of the kidney's functions. If this function is interfered with, the normal acid-base equilibrium must be disturbed, and eventually acidosis is inevitable.

According to Marriott and Howland, the retention of acid phosphate (for approximately 90 per cent. of the phosphate in an average urine is acid phosphate) would seem to be sufficient to account for the degree of acidosis observed. It does not follow that this is the sole factor in the acidosis of nephritis, particularly in the terminal stages. The retention of acid phosphate in nephritis is not part of a general salt retention; it seems due to a certain specificity of retention, for it has been found that the inorganic phosphates were much increased when there was no increase of sodium chlorid. It is also not necessarily proportional to the total nitrogen and urea retention. The phosphate retention is not a result of acidosis per se, for Marriott and Howland have failed to find an accumulation of phosphates in the serum in severe cases of acidosis in diabetes and other forms of acetone body acidosis. That the high phosphate content is due to interference with a specific function of the kidney and not to increased phosphate production in the body or increased absorption from the intestinal tract is shown by the fact that the urinary output of phosphate is not increased and, indeed, may be diminished. It is possible to determine a constant for phosphate excretion analogous to Ambard's constant for urea.

Administration of alkali generally fails to bring about any noteworthy reduction of the accumulated phosphate in the blood plasma. Herein lies a warning against the indiscriminate administration of bicarbonates in kidney disease. The warning to use alkalies rationally is timely in these days when nephritis and alkali therapy are blindly linked together without restriction by many clinicians. The accumulated phosphates of the serum, even though neutralized, are capable of doing serious harm to the organism. The amount is sufficient to have a definite influence on the osmotic pressure. This suggests a possible connection with the phenomena of edema and hydremia.

3. Pittenger, P. S., and Vanderkleed, C. E.: Jour. Am. Pharm. Assn., 1917, **6**, 131.

4. Palmer, W. W., and Henderson, L. J.: A Study of the Several Factors of Acid Excretion in Nephritis, Arch. Int. Med., July, 1915, p. 109.

5. Marriott, W. McK., and Howland, J.: Phosphate Retention as a Factor in the Production of Acidosis in Nephritis, Arch. Int. Med., November, 1916, p. 708.

In calling attention to the fact, known to physiologists, that administration of calcium, which is eliminated by the bowel chiefly, leads to an associated output of phosphate through the intestine, Marriott and Howland have offered a suggestion for possible therapeutic procedure. A new point of view in respect to the untoward features of acidosis, retention and other related phenomena has been presented.

ARE YOUR PRACTICE AND SOCIAL RELATIONS SUCH THAT YOU CAN SUSPEND THEM FOR A FEW MONTHS OR FOR A YEAR, IF NEEDED?

THE ESTIMATION OF ACIDOSIS UNDER CLINICAL CONDITIONS

Despite the somewhat indefinite significance attached in the past to the term "acidosis," what this word actually represents is rapidly being determined, thanks to the unusual attention given to problems in relation to it. A recent writer[1] has described acidosis as including conditions in which there is a general impoverishment of the body in bases or substances which readily give rise to bases. This may be due to faulty absorption of bases, to an unusual loss of bases from the body, or to their neutralization by abnormal amounts of acids. Increase in the amounts of acids in the body may be due to the production of abnormal acids, an overproduction of the usual body acids, or, as Howland and Marriott have recently suggested, to an accumulation of normal acids because of failure in excretion.

The attempts to obtain evidence of one or more of these forms of acidosis have been varied. Owing to the fact that the carbon dioxid of the blood decreases in amount as acids other than carbonic acid increase therein, indications of acidosis have been sought by determining the carbon dioxid content of the circulating medium. The estimation of the carbon dioxid in alveolar air furnishes such statistics. Studies of the output of acid in the urine have been made for the same purpose. The body as a whole has been titrated, so to speak, by ascertaining the amount of alkali necessary, when administered by mouth or otherwise, to render the urine alkaline. Ordinarily in this way it takes from 5 to 15 grams of sodium bicarbonate to change the reaction of the urine of a healthy person from acid to alkaline. When acid production is overabundant, much more alkali may be required. It may happen, however, that part of the neutralization of excessive amounts of acid in the organism is taken care of by the ammonia mechanism; hence an increased output of ammonia is also looked on as indicative of excessive production of acid. The ketone substances are also not without significance.

Some of these various signs of acidosis may be obtained in numerous diseases. In each case, however, as Frothingham has pointed out, not all tests may be positive.[2] For example, acetone may be found in diabetes and in diseases in children, while in chronic nephritis it is not present; yet all of these conditions may show the alveolar carbon dioxid lowered or the sodium bicarbonate tolerance increased. It would seem, therefore, that so-called acidosis is not due in each case to the same abnormal factors. Frothingham, accordingly, has studied several of these tests for acidosis in the same case at the same time, to find out how the patients in whom an acidosis is supposed to exist react to the different tests. So far as possible, patients were selected who presented an uncomplicated picture of a single disease. In each case the carbon dioxid tension in the alveolar air was determined, the soda tolerance test was carried out, and the twenty-four hour specimen of urine was examined for the presence of acetone, for its hydrogen ion concentration, for the total nitrogen and for the ammonia nitrogen.

In reviewing the outcome of his experiments, Frothingham feels convinced that the hydrogen ion concentration in the urine is not reliable as an index of acidosis. Evidence of acidosis appeared at times in certain diseases, while in others no evidence of it was found. Those diseases, he states, which showed an acidosis at times by some of these tests are diabetes, chronic nephritis, pneumonia, acute articular rheumatism and several acute febrile conditions in a miscellaneous group. Cases of exophthalmic goiter, epilepsy, syphilis, chronic cardiac disease, subacute nephritis, lung abscess, and many in the miscellaneous group distinctly did not show any evidence of acidosis by these tests. The results in the cases of primary anemia, gastric cancer, Addison's disease and cirrhosis of the liver were not so clearly defined, and in some of the tests suggested a slight acidosis. Furthermore, he believes that the acidosis found in diabetes is due to different causes, in part at least, from those which produce it in other conditions. It also seems likely that the acidosis encountered in different diseases is due to various causes, since the comparative response to these tests varies somewhat in the different conditions.

Studies like these enable the clinician to gain a critical insight into the relative values of some of the methods now in use for ascertaining the existence of acidosis. Of these tests, says Frothingham, either the estimation of the carbon dioxid tension in the alveolar air or the soda tolerance test showed variation from the normal in all the cases of acidosis. They also seem to be of value in detecting the degree of acidosis.

1. Sellards, A. W.: Bull. Johns Hopkins Hosp., 1914, **25**, 101.

2. Frothingham, Channing, Jr.: Acidosis in Acute and Chronic Disease, Arch. Int. Med., December, 1916, p. 717.

Terminal Illnesses.—The terminal illness is not usually the one which has been the deciding factor in determining the individual's length of life. It is frequently but the last inimical process to attack a weakened human organism, an organism exhausted and with diminished resistance as a result of previous diseases and morbid processes.—J. W. Trask, *Public Health Reports*, Dec. 22, 1916.

Current Comment

THE SCIENTIFIC PROGRAM AT NEW YORK

We publish in this issue the program of the fifteen scientific sections which form the Scientific Assembly. A glance through these programs will show that they present to the various sections a remarkable number and variety of scientific topics covering the whole field of modern medicine and reflecting the progress being made in medicine. The symposium on poliomyelitis ought to be of very practical and timely interest. Another subject that is also timely and important and should attract a large audience is the discussion in the Section on Preventive Medicine and Public Health of the service required of the medical officers of the army and navy. As will be noticed, papers on military medicine and surgery also appear in other sections. Incidentally, it is to be regretted that all of this material could not have been presented at one time and place. The local committee on arrangements has provided for the demonstration of a field hospital unit in which the practical equipment of such a unit will be available for inspection and study. The details of the arrangements of the opening meeting and for the social entertainment are not available for publication in this issue, but will appear shortly. However, we can assure those Fellows who are planning to attend the New York session that they will not be disappointed. Not only will they be furnished a scientific program that will satisfy their professional taste, but they may also depend on having a good time socially.

HAVE YOU MADE APPLICATION FOR APPOINTMENT TO THE MEDICAL CORPS OR MEDICAL OFFICERS RESERVE CORPS OF THE ARMY?

"PREPAREDNESS" AND THE EXAMINATION OF RECRUITS

During the early months of their active service, the most important work for medical officers, both as to the amount and the responsibility assumed, will be the examination of recruits. The first call will be for 500,000 men, in addition to the number necessary to bring the regular army up to the quota provided in the law of June 3, 1916. This still requires approximately 160,000. The examination of 660,000 men is a pretty large undertaking, especially if the examination is made as thoroughly and as carefully as it should be made. The aftermath of the Spanish-American War, with its disabilities already requiring pensions far beyond reason, should be a sufficient warning to our government not to follow the lax methods regarding the enlistment of men which prevailed in 1898. France and England have had a sorry experience, and both have learned at tremendous cost the folly of regarding quantity as of more importance than quality. However, no matter whether the examination shall be rigid and inclusive—to include, for instance, the Wassermann test—or more or less superficial, the fact is that the medical officers, especially the Reserve Corps, have a tremendous and responsible task before them. Undoubtedly many who will be assigned to the examination of recruits have become rusty in diagnostic methods and will need to review some lessons in physical diagnosis. The physical examination of recruits is practically the same as that for life insurance, except that it is on a larger scale, and in some respects is, or should be, more exacting. All who have now offered themselves, or who are proposing to offer themselves, for the Medical Officers Reserve Corps should adopt the principle of "preparedness" and be ready when called. The War Department has a manual entitled "Rules for the Examination of Recruits" (General Orders No. 66), which contains valuable information. This is supplemented by U. S. Army Recruiting Circular No. 1. These pamphlets can be obtained by addressing the Army Medical Department—or THE JOURNAL will gladly send a copy on receipt of a stamped, directed envelope.

YOU WILL FIND APPLICATION BLANKS IN THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION OF TWO WEEKS AGO, APRIL 21.

EFFECT OF GASTRIC JUICE ON THE JEJUNAL MUCOSA

The consideration of ulcers of the upper digestive tract as manifestations, in part at least, of the elective invasion of the tissues by certain types of streptococci has directed attention away from some of the older assertions in respect to the etiology of this condition. Mechanical factors, for the time being at least, have lost much of their interest in connection with the origin of gastric and duodenal ulcers. The possibility of a corrosive action of the gastric juice on a necrotic or otherwise damaged mucosa cannot be overlooked, however, particularly in view of the fact that somewhat effective therapy seems to have been found in the constant administration of alkalies, which are supposed to effect their cure by neutralizing the acid gastric juice.[1] Whether the chronicity of certain types of ulcer is due entirely to bacterial infection, as is lately contended, or to the combined effects of streptococci and the corrosive action of the gastric juice may still be debatable. Hardt[2] has maintained that there is no "hyperacidity" in the gastric juice following the experimental production of gastric ulcers; and when gastric or duodenal ulcers exist there may or may not be a continuous hypersecretion. At the Mayo Clinic, Mann[3] has implanted functionally resected portions of the jejunum with intact blood supply into the posterior wall of the stomach in the region of the antrum of the pylorus. The continuity of the intestine was maintained by anastomosis. It was thought possible, by concentrating the effect in the stomach, to determine the part, if any, played by the gastric juice in the production of gastrojejunal ulcers. In such an experiment the portion of the jejunum, which is usually next to the stoma in a

1. Compare Sippy, B. W.: Gastric and Duodenal Ulcer, THE JOURNAL A. M. A., May 15, 1915, p. 1625.
2. Hardt, L. L. J.: Contributions to the Physiology of the Stomach, XXXIII, The Secretion of Gastric Juice in Cases of Gastric and Duodenal Ulcers, Am. Jour. Physiol., 1916, **40**, 314.
3. Mann, F. C.: The Effect on the Jejunal Mucosa of Exposure to the Gastric Juice, Jour. Med. Research, 1917, **35**, 289.

gastrojejunostomy, was placed in the part of the stomach which is almost always bathed with free acid. Furthermore, the condition of the transposed jejunal mucosa differed from that of the mucosa near the stoma of a gastrojejunostomy in that the former was not protected by the other intestinal secretions. Because of this, Mann points out, the effect of the acid on the transposed jejunum should be decidedly augmented. Although, in some cases, there was a slight thickening of the transplanted mucosa and muscularis and an increase in the number and size of the mucus-producing cells, this effect was not uniformly observed. Sometimes no change was noticed, the jejunal mucosa remaining anatomically normal. Its physiologic functional power was also unimpaired. Fat was apparently absorbed with readiness by the transplant in the stomach, in harmony with what occurs through the same membrane in its usual location in the intestine and in contrast with the failure to take up fats which Mendel and Baumann[4] have described for the true gastric mucosa.

OTHERS ARE MAKING THE NECESSARY SACRIFICES. WHY NOT YOU?

THE NEW YORK SESSION OF THE AMERICAN MEDICAL ASSOCIATION

In May, 1846, in response to a call issued by the Medical Society of the State of New York, there was held in New York City a conference for the purpose of discussing questions relating to the standardization of medical education in the United States. This conference adjourned to meet a year later in Philadelphia, where it resolved itself into a permanent organization —the American Medical Association. On three different occasions since then New York has been the place of meeting: in 1853, 1864, and 1880. Now again an annual session—the sixty-eighth—is to be held in the city which may be considered the birthplace of the Association.

DO NOT DELAY. ACT NOW. TIME IS PRECIOUS. YOUR COUNTRY NEEDS YOU.

THE SHORTAGE OF SALVARSAN

Simultaneously there come to THE JOURNAL two communications: The first is a telegram from Idaho, "Can you send me ampule neosalvarsan, salvarsan or arsenobenzol? Cannot get it in the West. Answer, collect." The second, a letter from a Chicago address: "I have 90 vials of neosalvarsan which I brought from Europe. It is in powder form in three different sizes of vials. There are 38 vials of 0.6 gram, 26 vials of 0.75 gram, 26 vials of 0.9 gram. I want eleven hundred dollars for them. Mrs. —." These communications tell their own story. Until Congress shall abrogate the patent on these drugs, physicians will be handicapped in fighting one of the most serious diseases, and the public and the army will suffer. And all for the commercial advantage of one concern.[5]

4. Mendel, L. B., and Baumann, E. J.: The Question of Fat Absorption from the Mammalian Stomach, Jour. Biol. Chem., 1915, **22**, 165.

5. It is reported that a bill to suspend the patent on salvarsan was introduced into Congress by Hon. H. W. Watson of Pennsylvania, and that hearings will be held on the bill this week.

Medical Mobilization and the War

No Change in Medical Teaching

We announced last week (p. 1267) that the deans of forty-six medical schools of the United States had been asked to hold a meeting in Washington to consider the recommendations of the Committee on Medical Schools of the Advisory Commission of the Council of National Defense. As a result of this conference it was decided that it would be inexpedient to alter established courses of instruction with a view to expediting graduation. The maintenance of existing standards of medical education was looked on as being better calculated to insure a regular and adequate supply of competent physicians, no matter how long the war may last, than would any modification of prevailing methods. It was agreed to reorganize the teaching forces so far as may be practicable in order to release from the faculties of the medical schools as many men as can be spared for military duty.

Conference of State Health Officers with the United States Public Health Service

At the annual conference of state and territorial health officers with the United States Public Health Service held in Washington, D. C., May 1, the possible war activities of state and territorial health authorities were given special consideration. It was pointed out that these agencies might assist the federal authorities in the sanitation of military and naval camp sites, and in the hygienic control of camps. The police power of the various jurisdictions might be brought to bear directly on the environments of camps, thus establishing a subsidiary control to that of the military authorities. Furthermore, the various state laboratories can be made available for the diagnosis and sanitary surveillance of infectious diseases among troops. Special precautions will be taken to prevent the introduction of such infectious diseases as tuberculosis and the venereal diseases in connection with which the civilian population bears such a close relationship to the military establishments. By promptly reporting to the United States Public Health Service epidemics of the various infectious diseases developing in any state or territory, the civilian health authorities will make such information available to the army and navy. This information will enable the military medical officers to take the precautions which the exigencies of military service permit, toward safeguarding the health of the troops. Such notification of infectious diseases was particularly urged with respect to poliomyelitis, epidemic cerebrospinal meningitis, smallpox, typhus, typhoid fever, paratyphoid fever and bacillary dysentery.

It was suggested that the general sanitary supervision of soldiers suffering from pulmonary tuberculosis and of persons found by recruiting officers to be unfit for army or naval service because of suffering from this disease might be taken over by the state health authorities. Local hospitals for patients suffering from communicable diseases might also be made available for the care of cases occurring among troops or in any branch of the naval service.

Among other duties which health officers may be called on to perform are the sanitary supervision and control of interstate transportation facilities likely to be used for military purposes and of the sources of water, milk and food supplies of the combatant forces. Another duty would be the sanitary control of refugees and interned aliens held in special camps.

The conference also requested the surgeon-general of the Public Health Service to advise the executive health officials of the various states as to the lines of activity in which the federal service will be able, in case of necessity, to aid state and federal health services during the war.

State Health Facilities to Be Offered to the Federal Government

At an unofficial conference of state and federal health officers held independently of the annual official conference of these officers with the Public Health Service, it was resolved that in view of the conditions incident to a state of war the public health personnel, resources and organizations of the various states and territories should be placed at the disposal of the federal government; that under these conditions, the correlation, supervision and direction of the various state and territorial and local health agencies should be turned over to the United States Public Health Service; and that aside from

hygienic and medical care of the actual military and naval forces, all sanitary and hygienic activities that required a national policy should be correlated, supervised and directed by the United States Public Health Service.

A resolution was adopted describing the present personnel and organization of the United States Public Health Service as entirely inadequate and recommending the establishment of a national reserve corps to supplement it. The proposed sanitary reserve corps would be made up of sanitarians and past assistant sanitarians each commissioned by the president for a period of five years.

Additional Examining Boards for M. O. R. C.

In addition to the boards mentioned in THE JOURNAL, last week, page 1267, boards for the appointment of officers in the Medical Officers Reserve Corps have recently been appointed at the following places:

FT. HUACHUCA, ARIZ., Major Charles E. Marrow, Med. Corps.
FT. MCPHERSON, GA., Lieut. Col. Thos. S. Bratton.
FT. SCREVEN, GA., Lieut. Harry Rubin, M. R. C.
NEW HAVEN, CONN., Lieut. John W. Churchman, M. R. C.
LOS ANGELES, Major William L. Kneedler, U. S. A., Ret.
SAN JUAN, P. R., Col. Basil H. Dutcher, Med. Corps.
BIRMINGHAM, ALA., Dr. John M. Lowrey, 727 1st Nat'l Bank Bldg.
LINCOLN, NEB., Lieut. L. B. Sturdevant, M. R. C., 757 Holdredge St.
SPRINGFIELD, MO., Dr. Joseph W. Love.
NACO, ARIZ., The Surgeon, U. S. Troops.
MOBILE, ALA., Capt. John O. Rush, M. R. C., 412 Van Antwerp Bldg.
BATON ROUGE, LA., Capt. Charles McVea, M. R. C.
MEMPHIS, TENN., Major Frank D. Smythe, M. R. C., 554 East St.
BOWLING GREEN, KY., Major Arthur T. McCormick, M. R. C.
NASHVILLE, TENN., Major Lucius E. Burch, Eve Bldg.
FT. CASWELL, N. C., Lieut. Walter A. Newman, M. R. C.
ABERDEEN, S. D., Lieut. William E. Clark, 519 7th Ave., S. E.
COLUMBIA, S. C., Lieut. Francis A. Coward, M. R. C., State Bd. of Health Lab.
KANSAS CITY, MO., Dr. John F. Binnie, Rialto Building.
FT. RILEY, KAN., The Surgeon.
AUSTIN, TEXAS, Capt. Albert F. Beverly, M. R. C., 311 W. 13th St.
SPRINGFIELD, ILL., Lieut. George N. Kreider, M. R. C., 522 Capitol Avenue.
SHEBOYGAN, WIS., Major Edward J. Barrett, M. O. R. C.
MT. VERNON, ILL., Capt. W. H. Gilmore, M. O. R. C.

These examining boards are now authorized to conduct examinations for the Medical Officers Reserve Corps without reference to the surgeon-general's office, until the papers are completed.

Age Limit for Medical Corps Officers

There seems to be a misunderstanding in regard to the age limit for admission to the regular Medical Corps of the Army. Until Jan. 1, 1918, any one who meets the requirements—hospital service, etc.—can receive his commission in the Medical Corps prior to reaching his thirty-fourth birthday. After that date the law fixes the maximum age at 32 years. Those taking the examination now may enter the Army Medical School in July and complete the course in October, at which time they will be commissioned.

Medical Reserve Officers to Serve on the Western Front.—The Military Relief Department of the American National Red Cross is preparing to send 112 physicians from the Medical Officers' Reserve Corps of the United States Army for service with the British troops on the western front.

Reserve Corps Organized at Detroit.—At a meeting held in Detroit, April 4, the Detroit section of the Medical Reserve Corps, United States Army, was organized. Dr. James W. Inches, formerly of St. Clair, now health officer of Detroit, was elected president, Dr. Louis J. Hirschman, vice president, and Dr. Alpheus F. Jennings, secretary.

New Marine Hospital.—Dr. James A. Nydegger, Baltimore, of the United States Public Health Service has announced that the hospital on Remington Avenue, Baltimore, would be equipped immediately and put in readiness for the reception of sick and wounded soldiers and sailors. Provision will be made for the reception of 200. When the Quarantine Station is taken over, the government will have three marine hospitals in Baltimore.

Auxiliary Medical Corps Organized.—The Richmond Borough, New York, Unit of the Auxiliary Medical Corps, has elected Dr. Alfred H. Thomas, New Brighton, captain, and Drs. Charles L. Allers, New York, George E. Pearson, St. George, and John D. Lucey, Stapleton, lieutenants.——Dr. Daniel S. MacArthur, LaCrosse, Wis., has organized an auxiliary medical corps to be known as the LaCrosse Medical Reserve Corps.

Orthopedic Surgeons Aid in England.—Twenty orthopedic surgeons are being secured for service in England under Col. Robert Jones. This expedition will be under the direction of the Military Relief Department of the American National Red Cross. Col. Robert Jones is perhaps the best known orthopedic surgeon in England. Among other positions which he holds, he is lecturer on orthopedic surgery at Liverpool University, president and treasurer of the Liverpool Medical Institute, member of the Council of the Royal Society of Medicine and twice president of the Section of Orthopedics in the International Medical Congresses. The American orthopedic surgeons will go from the United States under the leadership of Dr. Joel E. Goldthwait of Boston.

Medical Men to Mobilize.—The first organized effort to mobilize the medical men of Maryland was made at the opening session of the annual meeting of the Medical and Chirurgical Faculty. Maryland has been asked to furnish 400 physicians for the Officers Reserve Corps. So far it has furnished but seventy-nine. Dr. Charles W. Mitchell, Baltimore, the principal speaker of the opening session, spoke on "The Physician's Duty in the Present Crisis." Osler Hall was turned into a recruiting station where information and application blanks could be obtained. Examinations for appointment as officers in the army or navy medical reserve will be held during the coming week, and will be conducted by a board composed of Maryland members of the reserve corps. Dr. John Staige Davis is chairman.

Columbia Unit War Hospital.—Within the brief space of a few weeks since the announcement that Columbia University was planning for an emergency mobile unit war hospital, funds have been subscribed, plans drawn, contracts let, and every preparation made for starting construction. Dr. J. Bentley Squier initiated the idea of this project, and its working out has been actively participated in by Dr. Adrian V. S. Lambert, Professor of Surgery of Columbia University. Dr. Alexander Lambert has received subscriptions amounting to $175,000, sufficient for the erection of the initial mobile unit. About $45,000 has been contributed by Mrs. E. H. Harriman for its equipment, some of which has already been purchased. It is planned to have a second identical unit organized immediately so that the hospital may be in continuous operation, and work continued without interruption.

New Members of the General Medical Board.—Since the publication of the composition of the General Medical Board, THE JOURNAL, April 14, page 1128, the following additional members have been appointed: Dr. John M. T. Finney, Professor of Clinical Surgery, Johns Hopkins University, Baltimore; Dr. Edward P. Davis, Professor of Obstetrics, Jefferson Medical College, Philadelphia; Dr. W. C. Woodward, Health Officer of the District of Columbia, Washington, D. C.; Dr. Simon Flexner, Director, Rockefeller Institute, New York; Dr. Theodore Janeway, Professor of Medicine, Johns Hopkins University, Baltimore; Dr. Hermann M. Biggs, State Commissioner of Health, New York; Dr. George Brewer, Professor of Surgery, University of New York, New York; Dr. George Walker, Johns Hopkins University, Baltimore; Dr. W. H. G. Logan, President-Elect, National Dental Association, Chicago; Dr. Sterling Ruffin, Washington, D. C.

Base Hospitals Ordered Into Active Duty.—Six of the base hospitals organized by the American National Red Cross for service with the Medical Department of the United States Army have been ordered abroad for active duty, probably in France. On arrival abroad they will be assigned to active duty, taking charge of hospitals in operation, as described in THE JOURNAL, March 31. The medical staff contains one medical director, two administrative officers, one quartermaster, one adjutant, nine surgeons and seven medical men.

The hospitals ordered into active duty are: base hospital No. 2, the Presbyterian Hospital, New York, Dr. George E. Brewer, director; base hospital No. 4, the Lakeside Hospital, Cleveland, Dr. George W. Crile, director; base hospital No. 5, Harvard University, the Peter Bent Brigham Hospital, Dr. Harvey Cushing, director; base hospital No. 10, the Pennsylvania Hospital, Philadelphia, Dr. Richard H. Harte, director; base hospital No. 12, Northwestern University Medical School, Dr. Frederick A. Beasley, director; base hospital No. 21, Washington University Medical School, St. Louis, Dr. Frederick T. Murphy, director. The administrative personnel of the base hospitals will be supplemented by two medical officers of the regular army corps, one sent as commanding officer and the other as adjutant. In addition, one line officer of the regular army will serve as quartermaster. The base hospitals are ordered into active duty to assemble at Fort Porter, Buffalo, for organization and train-

ing. It is reported that they will leave for France in from three to four weeks.

Lord Northcliffe on the Medical Corps of the Army.—Lord Northcliffe is widely known as an astute journalist with a view of science, of law, of every field of human endeavor as broad as that of many specialists in those fields. In a recent consideration of the lessons which the United States may learn from French and British mistakes, Lord Northcliffe comments on the work of the medical department of the army. In considering the question of sending a contingent of American troops to France he says:

> First and above all, there is the health of the contingent. How many lives did we lose at the outset by inclusion in our units of men medically unfit?
>
> Before the war the German physical examination of each would-be soldier occupied the time of two or three skilled medical advisers for from forty-five to sixty minutes. Our own medical examinations at the outset were too often a farce. Medical examination of men for the work of warfare is beset by so many pitfalls that without special training it cannot be undertaken by ordinary civilian doctors. Luckily for you, you have as one head of your army that great soldier, General Leonard Wood, who himself understands medical matters.

It is Lord Northcliffe's belief that too much emphasis cannot be laid on the work of the medical department. The English medical department, he believes, was sufficiently qualified for its work.

> The war has taught us that just as important as airwork, artillery work, the work of rifle and bomb, is the equipment of the medical services. In that matter you cannot do better than to follow our example. . . . By a fortunate miracle, our Royal Army Medical Corps had, before the war, a staff of men of ability and vision, men who actually saw the size of the operations in the next war. I do not believe it would be possible to better our equipment. There are quite a number of American medical observers who can tell you all about it. Americans who have been both on the German and on the English side have reported that there was no comparison between the two, even so late as the battle of the Somme, when the war was more than two years old. The German medical force broke down entirely and was unable to meet the terrific rush of casualties. I have had that statement directly, not only on the authority of American eyewitnesses but also from other neutral observers.

Military Surgeons' Practice to Be Protected.—At the April meeting of the Marion County Medical Society a resolution was adopted providing that

> Every physician who is called to the colors will receive from his colleagues who do his practice at home one-third of all the gross collections, to be paid the physician or his family monthly, as long as he holds a commission under that of major, and no longer. When he returns, irrespective of his rank, his practice shall be returned to him intact.
>
> Any patient consulting a physician who is not one of that doctor's regular patients, is to be asked to state if one of the physicians in the service of the government is his regular physician, making it clear to the patient why he is asked this question.
>
> Every physician entering the government medical service is expected, or should make an effort to procure from his patients signed statements to the effect that they are his patients. These signed statements to be filed with the secretary of the society, and the secretary shall furnish copies of these names to his local colleagues.

The New York City Committee of American Physicians, at its meeting in New York, April 13, decided to form an auxiliary in each of the five boroughs of New York, to cooperate with the adjutant-general of the state, in ascertaining the medical and surgical resources, and to sanction any financial and personal agreements entered into by physicians to protect the practice of those who enter the Army service. The excutive council of the committee elected consists of Dr. Karl A. Connell, Col. William S. Terriberry, M. C. N. G., N. Y., and Drs. George D. Stewart and Charles H. Peck.——At a meeting of the Richmond County Medical Society, April 13, resolutions were adopted providing that the practice of physicians who enter the military service will be cared for by those who remain at home, that faithful records will be kept, and that no charges will be made for such services.——Plans have been made whereby the practice of physicians of Spokane who enter the military service will be conserved under the auspices of the Spokane County Medical Society. It is proposed that physicians in the military service receive compensation equal to their former earnings.——The Racine Physicians Association, at its meeting, April 17, adopted a resolution providing that physicians who remain at home in the present war crisis shall share the burden of those who are in the military service and that one third of the receipts of practice among patients of such military surgeons shall be paid to the secretary of the county society and held in trust by him for the physicians or turned over, on his order, to the physician's family.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

New State Hospital.—The Arkansas legislature recently passed a bill providing for the sale of certain lands, by which a sum estimated at $150,000 will be provided to erect a new state hospital in Little Rock. This is to be the teaching hospital of the University of Arkansas Medical Department and under the control of the board of trustees of the university.

District Society Election.—At the semiannual meeting of the Tenth Councilor District Medical Society held in Fort Smith, March 20, Dr. Samuel D. Kirkland, Van Buren, was elected president; Dr. John M. Taylor, Fort Smith, vice president, and Dr. Arthur F. Hoge, Fort Smith, secretary. Fort Smith was also selected as the place for the September meeting.

ILLINOIS

Chicago

Personal.—Dr. W. A. Newman Dorland has been elected deputy governor of the Illinois Society of the Order of Founders and Patriots.——A protest has been made by Miss Mary Bartelme, assistant to Judge Arnold of the Juvenile Court, against the action of the city physician in disposing of Dr. Clara P. Seippel, who has been on duty in that court, and assigning her work to a male physician.

Cook County Hospital.—At a meeting of the attending staff of the Cook County Hospital, April 12, a resolution was adopted thanking Mr. Clayton F. Smith, who resigned recently to accept the position of city treasurer, for his efficient cooperation in the provision of adequate medical and surgical care for the patients.——Mr. Michael Zimmer, formerly warden of the State Penitentiary, Joliet, was appointed superintendent of Cook County Hospital, April 19, to succed Mr. Smith.

Hospital Items.—The cornerstone of the Swedish Mission Covenant Hospital at Foster and California avenues was laid, April 22. The hospital, which will cost $175,000, will accommodate 120 patients.——The Memorial Hospital has acquired the Douglas Hospital property at Rhodes Avenue and Thirty-Second Street.—The new buildings of the Chicago Lying-In Hospital, at Fifty-First Street and Vincennes Avenue, are almost completed. The buildings and equipment will cost $350,000, and it is expected that the institution will be ready for occupancy early in June. It will accommodate 120 patients, one third of whom will be free, one third, part-pay, and one third, full-pay patients.

Chicago Men Address Societies.—From May 6 to 13, Dr. Otto T. Freer will give a course of lectures illustrative of operations and demonstrations at Portland, Ore., by invitation of the Portland Ophthalmological, Otological and Laryngological Society.——Dr. Clarence L. Wheaton delivered a public lecture on "The Prevention of Tuberculosis," and Dr. Charles H. Parkes made an address on "Some Reasons Why a Tuberculosis Sanatorium Should Be Established," in the Grand Theater, Keokuk, Iowa, March 23.——Dr. Lewis L. McArthur read a paper on "The New Method of Utilizing the Gallbladder in Gastric Surgery," and Dr. Harry S. Gradle read a paper on "Eye Symptoms in Tabes Dorsalis," before the Lynn County Medical Society, at Cedar Rapids, Iowa, March 20.

INDIANA

Health Officers School.—The annual conference and school for health officers will be held in Indianapolis, May 22 and 23.

Personal.—Dr. Lorin W. Smith, Wabash, who suffered the amputation of both legs as the result of burns received in an automobile accident recently, is reported to be doing well at the Park Hospital, Wabash.——Dr. Paul E. Bowers, medical superintendent of the Indiana Hospital for Insane Criminals, and the Indiana State Prison Hospital, Michigan City, delivered a series of lectures on "Criminals" and "Treatment of Criminals," to the police departments of Hammond, East Chicago and Gary, recently.

Oral Inspection of Schoolchildren.—The Indianapolis Dental Society and the city board of health have announced plans for a system of oral hygiene inspection of city schoolchildren. The teeth of all schoolchildren will be examined without cost. Following the examination, a card will be sent to the parents indicating that dental work should be done. If the parents feel unable to pay for the necessary work, it will be done free. It is planned to make this survey one of the most complete that ever has been conducted in any city of the United States.

KENTUCKY

Nurses Home Needed.—The Norton Memorial Infirmary, Louisville, has applied for permit to erect a three-story nurses' home at a cost of $40,000. The building will be of brick, 29 by 145 feet, and will contain rooms for forty-eight nurses, besides the necessary offices, recreation rooms and lecture room.

Postgraduate School for Nurses.—The Kentucky State Board of Tuberculosis Commissioners has decided to establish a postgraduate school to train nurses for public health. The school will be known as the Kentucky State Board of Tuberculosis Commissioners Postgraduate School for Public Health Nursing. Headquarters will be maintained at Louisville with branches at Lexington, Versailles and other points throughout the country. Tuition to Kentucky nurses will be free. The course will include three to five weeks' instruction and demonstration of public health nursing of the sick; two weeks' instruction in the proper management of sick babies; a three weeks' course or longer in the special training and management of tuberculosis patients in the home and in the clinic, and in addition a special course of lectures will be given by Dr. John B. Floyd, medical director and superintendent of the Waverly Hills Sanatorium, on "Medical Aspects of Tuberculosis."

LOUISIANA

Health Survey of New Orleans.—A health survey of New Orleans will be started next month by the Metropolitan Life Insurance Company, which will bring 168 men to aid in making a thorough survey of the health conditions.

MAINE

Personal.—Dr. Carl M. Robinson, Portland, has returned from France where he was on duty with the Harvard Unit on the western front.

Osteopathic Bill Fails of Passage.—The senate osteopathic bill, which provides for a separate board of examiners, was killed during the last week of the legislature.

MARYLAND

Osler Testimonial Fund.—The Medical and Chirurgical Faculty of Maryland has created a fund of $10,000, to be known as the Osler Testimonial Fund, the income of which is to be used for the purchase of books for the faculty, library, and for the upkeep of the hall which bears Sir William Osler's name.

New Faculty Officers.—At the one hundred nineteenth meeting of the Medical and Chirurgical Faculty of Maryland, the following officers were elected: Dr. William S. Halsted, Baltimore, president; Drs. James E. Deets, Clarkesburg, James McF. Dick, Salisbury, and Julius Friedenwald, Baltimore, vice presidents; Dr. John Staige Davis, Baltimore, secretary, and Dr. William S. Gardner, Baltimore, treasurer. The medical examiners appointed were: Drs. Charles C. W. Judd, Baltimore, and Albert L. Wilkinson, Raspburg.

NEW YORK

Personal.—Dr. Francis C. Clark, Staten Island, deputy health officer of the port of New York, has been granted a leave of absence in order to accept active duty as assistant surgeon in the United States Navy, and has been ordered to duty at the Recruiting Station, Paterson, N. J.

Dental Standard of New Columbia School.—The dental school which is being organized as a part of Columbia University will not be a part of the medical school but will be closely allied with it. Dental students will be required to complete two years in the college, spend two years in the medical school, gaining a foundation in medicine, and then complete their course by two years' special training in dentistry.

Training for Hospital Work.—The West Side Y. M. C. A. is cooperating with the Home Defense League in providing a course of training in regular first aid work. Dr. Theron W. Kilmer, for eight years surgeon of the New York militia, and a corps of physicians and nurses will begin the training, April 30. The course will be in cooperation with the Red Cross Society, and the latter will grant diplomas to all who pass the examination. It is said that many large business firms will send groups of employees.

Alienists to Test Prisoners Condemned to Death.—Owing to the many attempts to delay the execution of condemned prisoners on the ground of insanity, Governor Whitman announces his intention of having commissions of alienists examine every condemned prisoner at a considerable period before the date set for electrocution. The commission appointed to examine all those now waiting execution in Sing Sing Prison consists of Drs. Charles W. Pilgrim, Poughkeepsie, Russell F. Kieb, and George A. Smith.

To Improve Hotel and Restaurant Kitchens.—The investigation of hotel and restaurant kitchens conducted last year by the department of health repeatedly showed that expensive structural alterations, insisted on by the department as necessary to promote sanitary conditions, could have been avoided by proper architectural planning. In order to obviate these difficulties, the department has addressed a letter to all architects of the city, enclosing a copy of the rules and regulations relating to hotels and restaurants, and a copy of the score card used by the department's inspectors.

Infantile Paralysis.—The finding of two cases of infantile paralysis, which was announced last week by the health department, occurred at College Point, Queens, and the other at Woodhaven, Queens. Both children were removed to Willard Parker Hospital. The health department is doing all it can to prevent the recurrence of an epidemic such as was experienced last summer. It urges the people that they must do their share by special attention to personal cleanliness and cleanliness in their surroundings.

Society Wins Suit.—William E. Godfrey, superintendent of an establishment in Brooklyn, which advertised a three-day liquor cure, was arrested in March, 1914, on the charge of practicing medicine without a license, waived examination and, when the case came to trial, the charges were dismissed. Godfrey then sued the Medical Society of the County of New York for $25,000 damages and was given a verdict of $2,500 by the General Sessions, Manhattan. The Appellate Division, on April 20, reversed the decision of the lower court and dismissed the complaint.

State Society Meeting.—The Medical Society of the State of New York met in Utica, April 24. The election of officers resulted as follows: president, Dr. Alexander Lambert, New York; vice presidents, Drs. Thomas H. Halsted, Syracuse; Albert W. Ferris, Saratoga, and Marcus B. Heyman, Central Islip; secretary, Dr. Floyd M. Crandall, New York; assistant secretary, Dr. Edward L. Hunt, New York; treasurer, Dr. Frank Van Fleet, New York, and assistant treasurer, Dr. Harlow Brooks, New York. The principal discussion of the meeting was on "Compulsory Health Insurance."

Industrial Disease Must Be Reported.—The State Industrial Commission announces:

> Inasmuch as cases of industrial diseases are not being reported by medical practitioners or institutions to the Department of Labor, State Industrial Commission, as required by Statutory law, it is necessary to call the attention of all practitioners of medicine and institutions of their obligation to report all such cases to the Department of Labor, State Industrial Commission.
>
> Article V, Section 65 of the Labor Law, making this requirement, has been in force since 1912 and has been in no way nullified by later ordinances of local boards of health of cities or towns. Attention is also called to the fact that a penalty of a fine is attached to failure to report these cases.

Bill to Develop State Hospitals Signed.—Governor Whitman has signed the Sage Hospital Bill, which provides for the creation of a commission consisting of the chairman of the state hospital commission, state engineer, state architect, chairman of the financial committee of the state legislature, and two persons appointed by the governor to adopt a general plan for hospital development. The bill carries appropriations of $20,000 for the expenses of the commission, $100,00 for new buildings at the Middletown State Hospital, and $299,255, the unexpended balance appropriated for work at Mohansic, to be applied in beginning construction of a new state hospital at Marcy, near Utica.

Public Health Committee of the Academy of Medicine.—This committee has presented its report for February and March showing a wide range of activities. It has cooper-

ated with the Municipal Civil Service Commission in choosing men requiring special medical training for different positions. It has considered harbor pollution; the organization of health districts, the health aspects of the Gary plan of school administration, and the possibility of a uniform system of hospital record keeping. It has expressed opinions on legislative matters, such as a charter amendment providing for filling the position on the board of health that will be made vacant when the Quarantine Station of the Port of New York passes into control of the federal government, the study of legislation with reference to habit forming drugs, etc.

PENNSYLVANIA

Philadelphia

Physicians' Hospital Incorporated.—Incorporation papers have been filed for the Physicians' General Hospital, Philadelphia.

New Tuberculosis Dormitory.—At Byberry Farms, the city is erecting another dormitory which will accommodate 300 tuberculosis patients. This will round out the new institutions about the city.

More Space Provided.—In answer to the request of the government for additional space for care of men wounded in war or in any emergency service, the women of Frankford have raised $3,500 for additional equipment in the Frankford Hospital.

Flies.—Introducing Fly Week, about 800 children known as juvenile sanitary inspectors, paraded from Star Garden, Seventh and Lombard Streets. At the close of "Fly Week" will come "Clean Up Week" and this will include baby welfare work.

Public Health Day.—Public Health Day was observed in Philadelphia, May 3. The Child Federation arranged elaborate plans for its observance. At night there was a mass-meeting at the Academy of Music, when the effect of clean streets on public health was discussed. Speakers of national prominence were present, and a motion picture film prepared by the Civic Club was shown.

College of Physicians Meeting.—At the meeting of the College of Physicians of Philadelphia, May 2, Dr. John H. Girvin read a memoir of the late Dr. Edward L. Duer. A portrait of Dr. John H. Packard was presented on behalf of the donor, Dr. Francis R. Packard, by Dr. Richard H. Harte, and Drs. Emanuel Libman and Reuben Ottenberg, New York, read a joint paper on "Observations on Transfusion."

Resolution on Resignation of Hirsh.—At a business meeting of the Philadelphia County Medical Society, April 18, a minute was passed on the resignation of Dr. A. Bern Hirsh, editor of the *Weekly Roster*, in which the society placed on record its high estimate of the public spirit and service of Dr. Hirsh in organizing the plan for a county society publication, recognized his life-long devotion to the high ideals of the profession, regretted the necessity for his resignation, and tendered its thanks to Dr. Hirsh.

Industrial Accidents Costly.—S. S. Ridley of the state department of labor, and editor of the *Journal* of the Pennsylvania State Department of Labor and Industry, gave impressive figures before the Monday conference in the New Century Club, April 23. Seven hundred and fifty persons have been killed in industrial plant accidents during the first three months of this year. Last year the compensation of these accidents amounted to $4,250,000. At the rate of accidents shown so far in 1917, the compensation will amount to $7,000,000.

Personal.—Dr. Orlando H. Petty, a medical inspector in the bureau of health, has enlisted in the Navy. Dr. Wilmer Krusen, director of public health, has appointed Dr. David W. Kramer to fill the vacancy.——Dr. Washington Merscher, former resident physician at the Germantown Hospital, has been appointed lieutenant in the Medical Corps of the National Guard of Pennsylvania, and assigned to the second field artillery.——Dr. Abram B. Hirsh has resigned as editor of the *Weekly Roster* of the medical organizations of Philadelphia.——Dr. Christian B. Longenecker is the new editor of the *Weekly Roster* of the medical organizations of Philadelphia.

Campaign Against Flies.—The cooperative committee for fly extermination plans to have each of the 7,000 stables in this city inspected once a week for two months this summer. The sum of $1,100 has been received, though no solicitation had been made. The finance committee is ready to spend $15,000, if necessary, on the work of extermination. One hundred and fifty inspectors will be needed for the work, fifty-eight of whom have already volunteered. Dr. Walter S. Cornell, chief medical inspector in the public schools, reports that he is planning a series of lessons in which children will be taught the life history, the injuriousness, and the importance of exterminating the fly.

Medical Institutions.—The new maternity building named for the late Dr. Elizabeth M. Peck at the West Philadelphia Hospital for Women was dedicated, April 23. One of the chief speakers was Mrs. Rudolph Blankenburg, wife of the former mayor, whose mother was one of the first women physicians in Philadelphia. Forty patients can be accommodated in the new building, which was erected at the cost of $105,000.——The Women's Medical College has established an obstetric fellowship amounting to $1,000, to be awarded annually to any medical woman of especial ability, who, following the undergraduate course, has completed at least one year of hospital service, including work in the maternity wards, and one year of further practice. The amount is to cover twelve months of special work as fellow in obstetrics, with the condition that the holder of the fellowship shall thereafter continue the practice of this specialty.

CANADA

British Columbia Vital Statistics.—The vital statistic report of the providence of British Columbia for 1916 shows that the total population is 383,380. During 1916, there were 9,841 births, 3,887 deaths, and 3,169 marriages, a rate per thousand of population, respectively, of 25.67, 10.14 and 8.27.

Personal.—The following Canadian medical men overseas have recently been promoted to the rank of lieutenant-colonel: John A. Amyot, University of Toronto; Charles E. Doherty, New Westminster, B. C.; Thomas A. Starkey, Montreal; Robert B. Wilson, Montreal, and Richard Raikes, Midland, Ont.——Gen. John Taylor Fotheringham, C. M. G., Toronto, has returned, and will proceed to Ottawa at an early date to take up his new duties of inspector-general for invalids. It is not yet known whether he will reorganize the hospitals and staffs of the Dominion, or whether those hospitals will remain under the special Hospitals Commission.—Lieut.-Col. Arthur Winters, formerly of Toronto, but who was studying in England at the outbreak of war, is now A. D. M. S., Quebec City Military District.

Consumption Among Canadian Troops.—The secretary of the Canadian Military Hospitals Commission gave evidence recently before the special parliamentary committee dealing with the treatment and employment of returned soldiers in which he favored more diversion and entertainment for hospital patients. Of the different tuberculosis hospitals in Canada, there were 674 beds available for these patients, and 602 of these were occupied. By the middle of August there would be accommodation for 1,200, and it was likely that a large central sanatorium would be required with 500 extra accommodation. A total of 227 "camp cases" had been handed over to the commission. At one time these numbered 60 per cent. of all the tuberculosis cases. The commission had simply been swamped by the "camp cases," and the future number depends on the rigidity of the examination. The secretary also announced that $100,000 subscribed by Mr. James Carruthers, Montreal, was being used for emergency cases.

GENERAL

Pathologists and Bacteriologists to Meet.—The next meeting of the American Association of Pathologists and Bacteriologists will be held at Minneapolis, March 29 and 30, 1918.

Biologic Products.—The government has given notice that the licenses of certain German manufacturers of biologic products have been revoked because it has been impossible to inspect them within the time required by regulation, and on account of present conditions they will be inaccessible to inspection for an indefinite period. Among the concerns affected by this notice are Chemische Fabrik auf Actien, Berlin; Farbwerke, vormals Meister Lucius and Bruning, Hoechst on Main; the Behringwerk, Marburg; E. Merck, Darmstadt; Kalle & Co., Biebrich; Pharmaceutische Institut Ludwig Wilhelm Ganz, Oberursel bei Frankfort, and Chemische Fabrik Güstrow, Güstrow, i. M.

National Association for Study and Prevention of Tuberculosis.—The thirteenth annual meeting of the National Asso-

ciation for the Study and Prevention of Tuberculosis will be held at the Hotel Sinton, Cincinnati, May 9 to 11. The bulletin of the association for April contains a preliminary program, information about sessions, hotels, railroad rates, entertainments, etc. In addition to the meetings of the advisory council, there will be separate clinical, pathologic and sociologic sections. In conjunction with the annual meeting of the National Association, the twelfth spring meeting of the American Sanatorium Association will be held at the Hotel Gibson, May 9. Dr. Charles J. Hatfield, 105 East Twenty-Second Street, New York, is executive secretary of the association.

Bequests and Donations.—The following bequests and donations have recently been announced:

New York Hospital for the establishment of a urologic department, a sum estimated at between $4,000,000 and $5,000,000, by the will of James Buchanan Brady, with the specifications that Dr. Oswald S. Lowsley shall be first director of the new department of the hospital and that if, in the further development of surgery or medicine, such a department shall become unnecessary, the legacy shall be used by the Society of the New York Hospital to service as nearly kin to the above as practical.

St. Christophers Hospital, Philadelphia, $2,000, by the will of David Vetter.

University of Pennsylvania, a reversionary bequest of the estate of John G. Johnson after the death of four heirs.

Mount Sinai Hospital Society, Boston, $1,000, by the will of Gustavus A. Peavy.

New England Hospital for Women and Children, an anonymous gift of $5,000.

American Hospital for Italian Wounded, Florence, Italy, $2,200, the proceeds of a musicale held in Chicago, April 16.

Examination for Anatomist.—The United States Civil Service Commission announces an open competitive examination for anatomist for both men and women to be held May 16, in various places in the United States. A vacancy in the Army Medical Museum, office of the Surgeon General, Washington, D. C., at $1,600 and future similar vacancies will be filled from this examination. Applicants must be citizens of the United States, must possess collegiate degrees and must have a thorough knowledge of the anatomy, of diseases brought by mosquitoes, of the relation of mosquitoes to the transmission of disease, of pathology, bacteriology, and pathologic histology, and must be capable of making photomicrographs; must understand microscopes and must be able to prepare, card and keep in order museum specimens. Applicants must have resided for at least one year in the state or territory in which they are examined, and must submit photographs to the examiner on the day of examination. Application should be made to the Civil Service Commissioner, Washington, D. C., or to the secretary of the local Civil Service Commission, for form 1312, stating the title of the examination desired.

Museum of Safety.—On account of the existence of a state of war the American Museum of Safety deemed it undesirable to hold the proposed dinner in connection with the presentation of the medals of the museum planned for April 19. The awards of the medals for the year are as follows:

The E. H. Harriman Memorial Medals: Awarded annually to the American steam railroad most successful during the preceding year in protecting the lives and health of its employees and the public, with replicas, in silver and bronze, to the division of a railroad and a railroad employee contributing most to the safety record. The gold medal to the Alabama Great Southern Railway, Cincinnati; the silver replica to the Illinois Division of the Illinois Central Railway, Chicago, and the bronze replica to Mr. James A. McCrea, General Manager of The Long Island Railroad Company, New York.

The Anthony N. Brady Memorial Medals: Awarded annually to the American electric railway accomplishing most in the preceding year for the safety and health of its employees and passengers, with silver and bronze replicas to the division and employee foremost in attaining the result. The gold medal to the Connecticut Company, New Haven, Conn.; the silver replica to Mr. Seth W. Baldwin, Assistant Attorney in charge of Claim Department, the Connecticut Company, and the bronze replica to Mr. Walter J. Flickinger, secretary to the president, the Connecticut Company.

The Scientific American Gold Medal: For the most efficient safety device invented within a certain number of years and exhibited at the Museum. To the Pullman Company, Chicago.

The Travelers Insurance Gold Medal: For the American employer who has achieved greatly in protecting the lives and limbs of workmen. The Commonwealth Steel Company, St. Louis.

The Louis Livingston Seaman Gold Medal: For progress and achievement in the promotion of hygiene and the mitigation of occupational disease. The Julius King Optical Company, New York.

Medical Museum.—The annual meeting of the American section of the International Association of Medical Museums was held, April 5, in New York, and the following officers were elected: president, Dr. Oskar Klotz, Pittsburgh; vice presidents, Drs. W. M. L. Coplin, Philadelphia, Harold E. Robertson, Minneapolis, and Daniel S. Lamb, Washington, D. C.; councilors, Drs. Aldred S. Warthin, Ann Arbor, Mich., W. M. Late Coplin, Philadelphia, Howard T. Karsner, Cleveland, Milton C. Winternitz, Baltimore, and Mr. R. A. Lambert, New York; secretary-treasurer, Dr. Maude E. Abbott, Montreal, and assistant secretaries, Drs. Joseph Kaufmann and Louis Gross, Montreal. Closer affiliation with the American section of the International Association of Medical Museums was urged, and a delegate to the annual meeting of the latter body was appointed. A committee was appointed to organize a central bureau for the permanent preservation of the results of scientific research, especially histologic material. A committee on the organization of a supply of square glass museum jars for the continent of America reported that arrangements had been made with a Pittsburgh firm to manufacture these jars in ten standard sizes, to be supplied at prices free of duty to the members of the association and scientific institutions. The scientific program was devoted to papers and discussions on "Museum and Laboratory Technic," "Presentation of the Results of Medical Research," "Microscopic Technic," "Museum Teachings," and special exhibits. The scientific exhibit of the association was kept open for three days for the benefit of the members of the Association of Pathology and Bacteriology.

FOREIGN

Hertwig Given Helmholtz Medal.—The Academy of Sciences at Berlin has presented the Helmholtz medal this year to Prof. R. v. Hertwig of the University of Munich for his microscopic research on zoologic subjects.

Large Legacy for Hospital at Marseilles.—Our Italian and French exchanges state that an Italian who had long made his home at Marseilles has bequeathed $7,000,000 to the city of Marseilles, mainly for the purpose of founding and maintaining a large hospital.

Imposing New Hospital at Madrid.—The *Siglo médico* brings illustrations of a recently completed, ornate and imposing hospital erected for charity patients by a wealthy widow, Señora Curiel. There are 200 beds ready, but only eighty are occupied, as it is said that the streets leading to the hospital are impassable at present for an ambulance. The hospital and its grounds fill an entire city block, and it is said to be a model in every respect.

Taxation of Proprietaries in France.—The syndicate of the organized manufacturers of pharmaceutic specialties in France has appealed to the authorities to refrain from crushing out by ruinous taxation the industry of pharmaceutic specialties menaced by bills now pending. They accept a tax, but insist that it should be applied to all *médicaments composés*, to which the manufacturer or the vendor affixes a special name or claims exclusive property in, or announces its superiority by means of advertisements, circulars or labels. They urge further that the tax should be collected only on such articles as are offered for sale, while the amounts donated free of charge to physicians and hospitals should be exempt from the tax. They also insist that the tax should be extended to cover all proprietary manufactured articles of the kind, perfumery, hygienic products and toilet articles, champagne, liqueurs, etc.

Deaths in the Profession Abroad.—I. A. Shabad, professor of pediatrics at the state Woman's Medical College at St. Petersburg, aged 47. He had made a special study of rachitis, its origin, nature and treatment. THE JOURNAL has summarized his communications as fast as they appeared, his success in treatment having apparently confirmed the soundness of his views. His painstaking and extensive study of individual cases over long periods has provided a basis for future investigators.——**A. Prieur,** editor of the *France médicale*, which he transformed into a historical journal, founder of the Société française d'histoire de la médecine, collaborator on the *Mercure de France*, aged 52. With him disappears probably the *France médicale*. It suspended publication at the outset of the war.——**W. Winternitz,** the pioneer of scientific hydrotherapy, professor of internal medicine at the University of Vienna since 1881, aged 82. He was docent of hydrotherapy from 1865 to 1874, and founded the monthly *Blätter für klinische Hydrotherapie* in 1890. His private institution for hydrotherapy was at Kaltenleutgeben, near Vienna.——**C. Hartwich,** professor of pharmaceutical chemistry, at the University of Zurich, aged 65.——**M. Bianchi,** assistant professor of hygiene at the University of Naples, aged 28.——**V. F. Snegireff,** professor of diseases of women and children at the University of Moscow, aged 70.

PARIS LETTER

PARIS, April 5, 1917.

The War

SCIENTIFIC DEGREES IN THE ORGANIZATION OF THE HEALTH SERVICE

Aristide Prat, deputy from the department of the Seine et Oise, proposed a measure intended to assure to physicians and pharmacists of the reserve of the territorial army in the organization of the military health service a grade corresponding to their scientific standing. In advocating his proposition, Prat said that degrees constitute an important element in the appraisement of the professional standing of physicians and pharmacists. The presidential decree of Dec. 31, 1915, permitting rapid promotion to the higher grades of the organization of members of the teaching faculties and staffs of hospitals, marked the beginning of an auspicious though incomplete reform (THE JOURNAL, Feb. 12, 1916, p. 522). The influential public will not fail to have recourse in all such delicate questions to the advice of the Academy of Sciences and the Academy of Medicine in their superior councils and the departments of hygiene. However, there is no assurance that they will not be continued in the inferior grades. The laureates of the Academy of Sciences and the Academy of Medicine, the doctors of medicine, equally with the doctors of science, were required to furnish evidence of their researches in order to obtain their titles. The professors of the schools of medicine and pharmacy, the prosectors, chief lecturers and chiefs of clinics of the Faculty of Medicine, and the senior interns of hospitals of cities possessing a faculty of medicine likewise obtained their degrees by laborious and difficult efforts; more often, far from assuring them an advantage in the military organization, their long service in the laboratories and hospitals had prejudiced their advancement. It is thus that the former interns of the hospitals, obliged to defer for four years the support of their theses, find themselves, in spite of their medical experience, lacking by four years of seniority the grade of aide-major over their comrades, less favored than they at the beginning of their internship.

Prat demanded that, during the continuance of hostilities, power be given to promote at once to the grade of physician-in-chief of the first class (corresponding to the grade of colonel), on condition of having possessed the grade of aide-major of the second class (sublieutenant), the members, national, honorary or corresponding, of the Academy of Sciences or the Academy of Medicine and the members of the Superior Council of Hygiene of France; likewise to promote at once to the grade of physician-major of the first class (Commandant) the titulary professors of the schools of medicine and pharmacy, the professors of the Faculty of Science, the laureates of the Academy of Sciences and the Academy of Medicine, and the members of the Commissions of Departmental Hygiene; finally, the power to promote at once to the grade of physician-major of the second class (captain) the assistant professors of the medical schools, the masters of conferences of the Faculty of Sciences, the prosectors, chief lecturers and chiefs of clinics of the Faculty of Medicine, the senior house surgeons of the hospitals of cities possessing a faculty of medicine, received within the last ten years in medicine, or pharmacists of the first class, and the members of the health commissions of the district.

The proposed measure has been favorably received in medical and parliamentary circles and has been referred to the Commission of the Army. It is probable that, after consideration by this commission, application will be made for a decree similar to that applying to the body of teachers by the decree of Dec. 31, 1915.

THE ORGANIZATION AND FUNCTIONS OF ADVANCED HOSPITALS

The experience in offensive operations has rendered it necessary to require that army corps install their hospitals as near as possible to the troops, in zones that escape the systematic bombardment by the artillery of the enemy; only such disposition will enable them rapidly to give the necessary aid to the wounded. The quartermaster general of the army has announced the precise regulations for the organization and functions of these advanced hospitals.

These ambulances, to which are attached one or several complementary surgical groups, constitute generally what is called *"groupements sur tentes"* (tent hospitals), on which devolve the receiving and distribution of cases, and the surgery of the greatest urgency. The wounded are taken there from the first aid stations by automobile ambulance and subjected to a first selection; the most severely wounded, those injured too severely to be transported farther, are operated on there; the slightly wounded, after examination and dressing, are sent to the evacuation hospitals or to the evacuation stations; both the slightly and severely wounded, whether evacuable or not, for whom intervention is necessary, are, after dressing at those stations, directed without delay to the central hospitals or to evacuation hospitals.

The relation of the advanced hospitals to those in the rear must be regulated with care, and, when the flow of wounded to an evacuation hospital of the first line becomes too great, the currents of evacuation must be directed to the hospitals of the vicinity or of the second line. Failure to observe the rules regarding the work of selection of wounded and the surgical operations devolving on the evacuation hospitals will rapidly result in overcrowding and the paralysis of their efforts.

The evacuation of the wounded from the first aid stations on the sanitary formations where they may be hospitalized must be done with the shortest possible delay. In the case particularly of the severely wounded—those with injuries or presumed injuries of the viscera (brain, thorax or abdomen), vascular or articular wounds, or compound fractures—retention in the intermediate formations between the first aid stations and the surgical stations must be interdicted rigorously, save in case of immediate danger to life. Therefore, redressings, unless absolutely necessary, should be avoided, and incomplete operations may be done, to be completed in the evacuation hospitals. On the contrary, all antitetanic injections must be done in the advanced hospitals.

These advanced hospitals, therefore, will most often be installed under tents, this character of construction permitting of rapid installation. If, however, the installation takes on a fixed character, the tents are replaced by barracks and the tents utilized anew farther forward, as the line advances. A group of two or three hospitals under tents will be composed of ten or twelve tents—two as receiving and dressing rooms, five or six tents for hospitalization (from 150 to 200 beds), and two tents for general purposes.

FILIFORM DRAINAGE IN WAR SURGERY

Moreau, of the marine service, communicated to the Paris Surgical Society the result of many observations on filiform drainage (Chaput) applied in cases of war surgery, and commented on the value of this form of drainage as compared with tube drainage. The lumen of the tube drain is often obliterated by coming in contact with a bone or a tendon, while under the same conditions the filiform will drain perfectly. Much of the time pus does not escape through the lumen of a tube drain, but around the outside of it; the terminal orifice of the drain is frequently occluded by the dressing; the tube sometimes falls into the natural cavities or into the dressings, while the filiform drain is not exposed to the same drawbacks. While one is obliged to remove tube drains on account of becoming obstructed, it is necessary to move the filiform drain only slightly to reestablish the drainage which may have been momentarily arrested by the purulent concretions. On the posterior part of the trunk and the limbs, tubes which emerge obliquely are flattened by the weight of the body or limb, while the filiform drain drains perfectly under the same conditions. Finally, tubular drains are often painful, but the patient will not suffer if the filiform drain is employed.

SPECIALISTS FOR EXAMINATION OF SOLDIERS

Thibierge recently directed the attention of the medicolegal society to the desirability of having specialists examine the soldiers primarily, before they are dragged from hospital to hospital, for a disease which is really easily curable, and not subjecting them to examination by a physician not especially competent, and who is called to treat them, and thus delay their recovery and return to service. The medicolegal society has declared itself in favor of such special examination, notably in cases of diseases of the nervous system, of the skin, and the organs of sense, being made by specialists.

Free Milk

The prefect of the department of the Seine has brought to the notice of the creameries and the retailers of milk that by arrangement of the municipal council of Paris, orders for milk, approved by the bureau of charities, will be delivered to deserving families for the feeding of their children in the amount of 1 liter per day for each infant under the age of 3 years. These orders will be redeemed by the cashier of the bureau of charities at the price of 50 centimes per liter, fixed by the ordinance of taxation of February 13 last.

Marriages

Martin Fred DuFrenne, M.D., Sun Prairie, Wis., to Miss Mary Pasich of Buhl, Minn., at Middleton, Wis., April 18.

Merritt LaCount Jones, M.D., Wausau, Wis., to Miss Grace Hayward Ivers of Cambridge, Mass., March 21.

George Victor Genzmer, M.D., Plainfield, N. J., to Miss Ethel Sherwin Smith of Philadelphia, April 11.

Margaret Dorothy Wermerskirchen, M.D., to Mr. Daniel Coleman, both of Milwaukee, Wis., March 2.

Harry Louis Alexander, M.D., to Miss Laura McElivian Stryker, both of New York, April 18.

Marion Trueheart, M.D., Sterling, Kan., to Miss Myrtle Proctor of Garden City, Kan., April 18.

Ada Belle Blair, M.D., Altoona, Pa., to Mr. W. Emery Mackey, at Pittsburgh, March 30.

Eugene Elgin, M.D., East Berlin, Pa., to Miss Celia Oneda Shriver of Hanover, Pa., April 10.

Deaths

William Henry Taylor, M.D., Richmond, Va.; Medical College of Virginia, Richmond, 1856; aged 81; a member of the Medical Society of Virginia; for many years professor of chemistry, toxicology and medical jurisprudence in his alma mater, and at the time of his death emeritus professor; for forty-five years coroner of Henrico County, Va.; state chemist of Virginia, and for many years a member of the Richmond Board of Health; a surgeon in the Confederate service during the Civil War; at one time a member of the editorial staff of the *Old Dominion Journal of Medicine and Surgery;* died at his home, April 14.

Henry Wells Dewey, M.D., Tacoma, Wash.; College of Physicians and Surgeons in the City of New York, 1881; University of Vermont, Burlington, 1882; aged 57; a Fellow of the American Medical Association; once president of the Washington State Medical Association, and twice president of the Pierce County Medical Society; who was appointed a member of the State Board of Medical Examiners in 1893; a practitioner of Tacoma for nearly thirty years; died in his office, April 12, from cerebral hemorrhage.

Joshua Ware Read, M.D., Newark, N. J.; Bellevue Hospital Medical College, 1867; aged 79; formerly a Fellow of the American Medical Association; a member of the Medical Society of New Jersey; police surgeon of Newark from 1878 to 1882; for many years a member of the board of education, and once president of the Practitioners' Club of Newark; coroner of Essex County; died at his home, April 17.

Herbert Seymour Gay, M.D., Boston; Harvard Medical School, 1902; aged 35; a Fellow of the American Medical Association; professor of gynecology in Tuft's College Medical School, Boston; assistant surgeon to the Boston Dispensary in the department for diseases of women; gynecologist to Mount Sinai Hospital and Tremont Dispensary; died at his home, April 21, from pneumonia.

Hugh B. Caffey, M.D., Pittsburg, Kan.; Tulane University, New Orleans, 1901; aged 37; a Fellow of the American Medical Association, and American Academy of Ophthalmology and Oto-Laryngology; first lieutenant, M. R. C., U. S. Army; a specialist on diseases of the eye, ear, nose and throat; died in the Christian Hospital, Kansas City, Mo., April 16, from brain tumor, shortly after an operation.

John Jay Buckley, M.D., Missoula, Mont.; College of Physicians and Surgeons in the City of New York, 1878; aged 64; a Fellow of the American Medical Association, and formerly president of the Cass County (N. D.) Medical Society; chief surgeon of the Northern Pacific Railway, western division, from 1887 to 1903; died at his home, April 13, from arteriosclerosis.

Frank Ernest Ruggles, M.D., Bay City, Mich.; University of Michigan, Ann Arbor, 1892; aged 47; a Fellow of the American Medical Association; once president of the Bay County Medical Society, and health officer of Bay City; a specialist on diseases of children; died at his home, April 16, from pneumonia.

George Kent Varden, M.D., Atlanta, Ga.; Medical College of Ohio, Cincinnati, 1905; aged 33; a Fellow of the American Medical Association; a specialist on diseases of children; a member of the faculty of Emery University and of the medical staff of St. Joseph's Infirmary, Atlanta; died at his home, April 11.

Clyde Jason Elmer, M.D., Los Angeles; St. Louis University, 1908; aged 41; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of California; died in the Clara Barton Hospital, Los Angeles, February 1, from gastric ulcer complicated by diabetes.

Albert Mott, M.D., Cohoes, N. Y.; Long Island College Hospital, Brooklyn, 1873; aged 66; formerly a member of the Medical Society of the State of New York; a member of the board of health of Cohoes since 1896 and health officer of the city since 1905; died at his home, April 14.

William Dean Wilson, M.D., Mount Clemens, Mich.; Rush Medical College, 1878; aged 60; a member of the Michigan State Medical Society; for nearly forty years a practitioner of Mount Clemens and mayor of the city in 1898; died in his apartment, April 13, from heart disease.

Henry Oliver Ely, M.D., Binghamton, N. Y.; College of Physicians and Surgeons in the City of New York, 1868; aged 70; formerly a member of the Medical Society of the State of New York; a police surgeon in New York City in 1870 and 1871; died at his home, April 21.

John D. Eakins, M.D., Gallipolis, Ohio; Jefferson Medical College, 1871; aged 66; formerly a Fellow of the American Medical Association; a member of the Ohio State Medical Association; for two years a member of the state legislature; died at his home, April 20.

Walter Stephen Chandler, M.D., Mount Olivet, Ky.; Medical College of Ohio, Cincinnati, 1889; aged 53; formerly a Fellow of the American Medical Association; a member of the Kentucky State Medical Association; died at his home, March 14, from pneumonia.

Wilmer Brown Hoge, M.D., Grand Island, Neb.; University of Michigan, Ann Arbor, 1886; aged 54; formerly a Fellow of the American Medical Association; for many years local surgeon of the Union Pacific System at Grand Island; died at his home, March 4.

Dunham E. Ash, M.D., Bradford, Pa.; Medical College of Ohio, Cincinnati, 1867; aged 65; a member of the Medical Society of the State of Pennsylvania; a member of the common council and select council of Bradford; died at his home, April 20.

Ezra S. Meals, M.D., Harrisburg, Pa.; Cincinnati College of Medicine and Surgery, 1874; aged 65; a member of the Medical Society of the State of Pennsylvania; who was serving his second term as mayor of Harrisburg; died, April 18.

Edgar Allen, M.D., Lafayette, N. J.; Jefferson Medical College, 1890; aged 55; formerly a Fellow of the American Medical Association; for the last two years postmaster of Lafayette; died at his home, April 17, from cerebral hemorrhage.

Joseph Michael O'Connor, M.D., Biddeford, Me.; Medical School of Maine, Brunswick, 1898; aged 40; a Fellow of the American Medical Association; a specialist in obstetrics; died at his home, April 20, from ptomain poisoning.

Hiram Sterling Pomeroy, M.D., Auburndale and Boston, Mass.; University of Leipzig, Germany, 1885; aged 68; a Fellow of the American Medical Association; died at his home in Auburndale, April 21, from heart disease.

George Kelsea Hildreth, M.D., New York; Harvard Medical School, 1905; aged 37; a specialist on diseases of the ear, nose and throat; a member of the staff of St. Vincent's Hospital; died at his home, April 6, from carcinoma.

William Packer Burdick, M.D., Kane, Pa.; University of Vermont, Burlington, 1885; aged 57; a Fellow of the American Medical Association; a specialist in anesthesia; died in the Kane Summit Hospital, April 16.

Samuel S. Cox, M.D., Lorain, Ohio; Western Reserve University, Cleveland, 1886; aged 56; a Fellow of the American Medical Association; died suddenly in his office, April 11, from angina pectoris.

William Cammett, M.D., Portland, Me.; College of Physicians and Surgeons in the City of New York, 1879; aged 63; formerly a member of the Maine Medical Association; died at his home, April 20.

Edward Tobey Tucker, M.D., New Bedford, Mass.; Harvard Medical Society; died at his home, April 10.

Coleman L. Poynter, Eldridge, Mo. (license, Missouri, 1884); aged 86; died at his home, January 13, from pneumonia.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

[CONTRIBUTION FROM THE CHEMICAL LABORATORY OF THE AMERICAN MEDICAL ASSOCIATION]

WHEELER'S TISSUE PHOSPHATES

L. E. Warren, Ph.C., B.S.

"Wheeler's Tissue Phosphates," known also as "Compound Elixir of Phosphates and Calisaya," is advertised as a nerve food and a nutritive tonic. The label states that it contains calcium, iron, sodium trihydrogen phosphates, alkaloids of Peruvian bark with 12½ per cent. of alcohol. The preparation is sold by the T. B. Wheeler, M. D. Co., of Rouses Point, New York. According to the manufacturer, Wheeler's Tissue Phosphates

". . . is an *inorganic* combination of the phosphates of iron and calcium and hydrogen (phosphoric acid) together with hydrochloric acid, hydrocyanic acid, and quinine, cheerful coloring, and a delicious, cordial-like flavoring."

". . . The iron is the green, inorganic phosphate and the calcium the simple white phosphate of your early student days. . . ."

The preparation is a red liquid, having an acid reaction, a sweet-bitter taste and the odor of wild cherry. Qualitative tests indicated the presence of calcium, iron, a phosphate, a chlorid, a sulphate, quinin or cinchona alkaloids, alcohol, sodium, cochineal coloring and invert sugar. Ammonium salts, glycerol, citrates or lactates were not found. From the quantitative values obtained the preparation may be taken to represent:

Sp. gr. at 25C./25C.	1.1087
Alcohol (per cent. by volume)	11.35
	Gm. per 100 c.c.
Calcium phosphate $[Ca_3(PO_4)_2]$*	0.397
Iron phosphate $(FePO_4.4H_2O)$*	0.068
Chlorid (as hydrochloric acid)	0.407
Sodium sulphate $(Na_2SO_4.10H_2O)$	0.043
Quinin sulphate (U. S. P.)	0.041
Sodium phosphate $(Na_2HPO_4.12H_2O)$	0.065
Invert sugar	26.824
Water, cochineal and flavor to make	100 c.c.

* It should be understood that the calcium and iron salts are held in solution by the hydrochloric acid.

The dose of Wheeler's Tissue Phosphates recommended by the manufacturer is a tablespoonful or about 15 c.c. (½ oz.). The total calcium in a dose of the preparation is equivalent to about one-sixth of an average dose of the official calcium chlorid, and the total phosphate to each dose is equivalent to about one-fourth of a dose of the official diluted phosphoric acid. Each prescribed dose of the preparation contains about 0.01 gm. (⅔ grain) of iron phosphate or about one twenty-fifth of the average dose, and to obtain a Pharmacopeial dose of iron phosphate the patient would be obliged to take three-fourths of the contents of an entire bottle—or 12 ounces—of the preparation. If it be assumed that all of the chlorid present is in the form of free hydrochloric acid, each dose of the preparation contains the equivalent of about two-thirds of one Pharmacopeial dose of diluted hydrochloric acid. Each dose of the preparation contains about 0.0062 gm. (1/10 grain) of quinin sulphate, or about one-sixteenth of the average tonic dose. In other words, to obtain the amount of quinin sulphate given in the U. S. Pharmacopeia as the tonic dose, the patient would be required to swallow 7½ fluidounces of the proprietary preparation, or the contents of nearly half a bottle. The fallacy of prescribing Wheeler's Tissue Phosphates either for its quinin or its iron content is apparent.

Wheeler's Tissue Phosphates is, then, a mildly bitter, flavored syrup which contains nearly 12 per cent. of alcohol, small quantities each of calcium phosphate and hydrochloric acid and insignificant amounts of iron and quinin salts. In other words, essentially it is a sweetened solution of small quantities of calcium phosphate in very dilute hydrochlorid acid together with 12 per cent. of alcohol.

Bearing in mind the analysis of the preparation, how ludicrous some of the claims appear:

"*Tissue Phosphates* is not a hypophosphite preparation; it is not a combination of glycerophosphates or other organic salts, or so called peptonates and manganates, all recently condemned by the best therapeutic opinion here and in Europe, as much slower and less active than the simpler salts. The iron is the green, inorganic phosphate and the calcium the simple white phosphate of your early student days. Nature takes these simple salts and builds them rapidly into lecithin, bone, and other tissue, without the delay incurred by splitting up the organic salts before she can recombine them."

"Tissue phosphates is in fact a *chemical food*."

"The formula, suggested by Professor Dusart, of Paris, combines in an easily assimilable and agreeable cordial; medium medicinal doses of Phosphorus, the Generator of Nerve Force; Calcium Phosphate, for Cell Development and Nutrition; Sodium Phosphate, a stimulant of Liver and Pancreas and Corrective of Acid Fermentation in the Alimentary Canal; Iron, generating in the Blood Heat and Motion; Phosphoric Acid, Tonic in Sexual Debility; Alkaloids of Calisaya, Antimalarial and Antipyretic; Extract of Wild Cherry, Tonic, yet Calming Irritation and Diminishing Nervous Excitement; Ethyl Alcohol 12·5%; and Aromatics."

Although the claim is made that the "formula" of Wheeler's Tissue Phosphates had been "suggested by Professor Dusart," such of Dusart's papers as were available in this country[1] failed to disclose any "formula" that was at all comparable to this product.

[EDITORIAL NOTE.—The investigation verifies facts that must be obvious to every physician who has given the matter thought. "Wheeler's Tissue Phosphates" is an unscientific, shotgun mixture whose most active and powerful drug is the alcohol it contains. That it was not years ago relegated to the realms of obsolete and discarded preparations is a commentary alike on the lack of scientific discrimination and the persuasive power of advertising. While in the past "Wheeler's Tissue Phosphates" has been advertised extensively in medical journals, it seems that now the chief, if not the only beneficiary of the advertising appropriation for this product, is the *New York Medical Journal* which weekly heralds the "Delicious" and "Sustaining" qualities of "The Ideal Tonic for Fastidious Convalescents."]

Correspondence

VERTIGO AND VISION

To the Editor:—Recent work on the internal ear has been summed up in an exceedingly instructive and succinct article by I. A. Jones (The Practical Uses of Recent Work on the Internal Ear, THE JOURNAL, March 17, 1917, p. 829). He notes that the attention of the eye specialist has not been called to the intimate relation between the eye and the ear, and mentions a well known ophthalmologist who, having had the elicitation of nystagmus by Politzer inflation demonstrated to him, obviously for the first time, by an otologist, expressed his astonishment that there was such a close relation between the ear and the eye. In the same article stress is laid on the vestibular apparatus, meaning the static portions of the internal ear, and the pathways from the ear through the brain-stem, cerebellum and cerebrum, as the usual if not exclusive source of vertigo. The author deprecates the use of such qualifying or "generalizing" adjectives as gastric, cardiovascular or idiopathic, as applied to vertigo. If the clinical tests prove the vestibular apparatus to be in physiologic order, the vertigo is "functional." Vertigo is definitely a disturbance of the equilibratory apparatus, and is due to an irritation, impairment or destruction of some portion or portions of the ear or its associated pathways.

1. Dusart, L.: Recherches expérimentales sur le rôle physiologique et thérapeutique du phosphate de chaux, Paris, 1870; Quel est l'acide du suc gastrique? Lille, 1874, unbound, 8 pages; Notice sur l'emploi et les proprietés du lacto-phosphate de chaux, Clichy, 1868, unbound, 8 pages. Dusart and Blache: Recherches sur l'assimilation du phosphate de chaux, Paris, 1868, unbound, 15 pages.

These conclusions make a short cut across wide unexplored fields. The vertigo of anemia, of fever states, of neurasthenia and other neuroses is ignored. Even the vertigo of seasickness, classical instance, is not to be simply explained and dismissed from analysis as an irritation of the static labyrinth, for the simple reason that the irritation is minimal, that ocular, visual factors play an important rôle, and that in much more marked instances of vestibular irritation, as in carousel riding or swinging, there may be no vertigo at all. On the other hand, every ophthalmologist knows that there are types of vertigo absolutely independent of any vestibular irritation, such as the vertigo, often heightened by nausea and vomiting, of diplopia depending on ocular motor paralysis or paresis, or on such slight confusion of vision as that produced by weak prisms, incorrectly inclined cylinders, or unsuitable spherical lenses. It is a well known fact of physiologic optics that decided vertigo and nausea can be elicited by looking at a swaying mirror, and the more easily, the less evident the sway.

All these facts and many more which might be cited indicate the importance of nonvestibular, and notably visual factors in many forms of vertigo. I have already called attention to these implications (The Non-Acoustic Functions of the Labyrinth, *Tr. Am. Otol. Soc.*, 1908, **11,** 158). We may even go to the point of asserting that vertigo is definitely not a disturbance of the equilibratory apparatus but a disturbance of consciousness which may, or may not, be due to such imbalance. It is the discrepancy between the conscious or subconscious data registered by vestibular stimuli and other data derived from vision and muscle sensations that causes the well known disorder of general sensation which we call dizziness. Disturbance of actual balance may or may not cause or accompany this symptom; it is by no means essential. Conversely, complete loss of balance may take place without a sign of vertigo (Fridenberg, Percy: A Review of Some Recent Theories of the Labyrinth, *Tr. Am. Otol. Soc.*, 1908, **11,** 290). Whirling in the dance does not cause dizziness. It is the stopping that does it, with the resulting discrepancy of stimuli analogous to the pain and discomfort which, in other anatomic regions, Meltzer has characterized as contrary innervation.

The differentiation of vertigo should also be extended to the conception of nystagmus. Spontaneous nystagmus is a lame phrase intended to signify nystagmus of ocular origin. All nystagmus which is not elicited by clinical tests is, *pro tanto*, spontaneous. Ocular, or as I have preferred to call it, visual nystagmus, is almost invariably irregular, wild oscillation, as in the cases of two children with cerebral disturbance cited in the article by Jones. The character of this irregular, seeking eye motion, is an index of its origin and a clue to its interpretation (Fridenberg, Percy: The Teleology and Interpretation of Nystagmus, *Ann. Ophth.*, October, 1908). Far from being, as is vestibular nystagmus, a reaction to turning or other changes in body position, a compensatory gaze correction by accompanying and drifting fixation toward apparent, because subjectively sensed, motion in the outer world, this visual nystagmus is a groping for vision and represents a return to a more primitive form of sense perception which I have likened to the movements of tentacles on a lower level of life. Recent advance in otology has undoubtedly systematized the tests of labyrinthine function and determined by practical, clinical observations as well as by experiment the bearing of nystagmus reactions, vertigo and overpointing. The result has been of great value, as Jones points out, in the diagnosis of obscure neurologic cases with symptoms of dizziness and oculomotor imbalance, as well as in otology, syphilology and general practice. The importance of the labyrinthine tests in excluding or including the inner ear as a disease factor in loss of conjugate ocular deviation is something to which I wish to add my testimony. It may also be applied, as was first shown by the Vienna school, in cases of coma in which otherwise no determination is possible of the functioning of the external ocular muscles.

A word of warning should be spoken as to accepting without modification the hard and fast rule as to an exact number of seconds of afterturning nystagmus to be elicited by passive rotation of the patient. Von Cyon and others noted, long ago, that this reaction, as well as the kindred phenomena of dizziness, and falling sensations, depended largely on the patient's previous habits in turning, or reversing in dancing, by his being right or left handed, etc., and that they were variously modified by these.

Finally, I wish to emphasize the fact that dizziness is a much commoner symptom than is generally supposed; that in its milder forms it is an almost invariable accompaniment of ocular muscle imbalance and a concomitant of eye-strain. While this in no wise belittles the importance of otologic tests of function, it should keep us from overlooking the frequency and significance of ocular factors in vertigo.

PERCY FRIDENBERG, M.D., New York.

COMPULSORY HEALTH INSURANCE

To the Editor:—Discussion has been invited on the compulsory health insurance bill. Dr. Lambert, in a pamphlet sent out to New York State physicians, also invites discussion. After reading Dr. Lambert's and other articles on the bill, it appears to me that there are a few fundamental questions which stand out rather prominently.

The bill which is being promoted in New York State—the Mills bill—is fostered by the American Association for Labor Legislation, the same association which secured the passage of the compensation bill. Their interest—we might say their only interest—is the welfare of the insured class. The proposed insured class is either apparently unfamiliar with this particular expression of solicitude, or with few exceptions definitely opposed to it. The American Association for Labor Legislation is concerned with the medical man only so far as he is needed in the scheme of the bill.

The insured class includes workers with incomes of $1,200 per year, and their dependents, variously estimated to be from 50 to 80 per cent. of the population of the state of New York. It does not include the large mass of inefficient workers—those chronically out of employment, the chronic invalids of the past years who cannot work, and those who under the act will be ill for more than twenty-six consecutive weeks. This group of persons will be continued as charity patients and will be treated by the physicians as heretofore, cheerfully without compensation. For this group of persons the Mills bill does not provide medical service, and it is this group which is most in need of medical service. They do not come under the act; consequently the physicians will not get 100 per cent. for work done, as implied in an article by Dr. Lambert.

Without question the method of payment to physicians for their work is important to the medical profession. When we stop to consider that a physician must spend from six to ten years in preparation for his profession, years of expenditure without income, we must conclude that the compensation must be in proportion to this investment, and sufficient to maintain his professional standing, in order to be adequate.

The Mills bill definitely plans to commercialize the medical profession—to commmercialize it on a very low plane. To meet this attempt, the medical profession should consider the fee question simply as a business proposition. A law which will give contract medical service to from 50 to 80 per cent. of the population of the state will have without question a widespread and profound influence on the economic status of a proportionate number of the physicians of the state.

The compensation bill affects medical practice but slightly, and that little unsatisfactorily. The health insurance bill will affect medical practice considerably; consequently the method of compensation and the amount of compensation should be definitely incorporated into the law. If the question of fees is left to the local boards, the fees adopted will probably be such as the local boards are familiar with, that is, the per capita lodge fee, which varies probably from $2 to $4 per family per year.

If the Mills bill is adopted, I cannot conceive of any other just method of payment to the physician than a method which pays the physician in direct proportion to the amount of

work he is called on to perform, that is, the average normal fee per visit, payment by visitation. There is no justice in the capitation system or in the payment by points against a lump sum.

I see no reason whatsoever why the state should attempt to commandeer the highly specialized services of a group of its citizens without paying the average normal price for this service. This might make the medical expenditure of the bill high; if so, the contributions to the fund should be increased to meet this necessary expense. Physicians as a body are charitable with their time and services to the unforunate poor of their communities, but charity should not enter into a broad scheme of medical services such as is contemplated in the Mills bill. The state is making to the physicians a business proposition, and it should be considered as such.

Investigations in Germany and in England have demonstrated that the introduction of compulsory health insurance has lowered considerably the economic status of the physician. The fees in Germany and England are low—indeed, very low—and in many instances the physician in order to make a living wage must overwhelm himself with work. His work is increased, but this increase is associated with a decrease of earning power. The result is that there has been a lowering of the standard of medical practice. The practitioner has not the necessary time to devote to medical study, medical literature, medical meetings and conferences which would enable him to keep abreast with medical progress. Medical progress as exemplified in the large medical centers has no practical bearing on the state as a whole unless it can be absorbed and applied by the general practitioner. As a result of this condition of affairs, it is stated that the insured classes in Europe do not get as good service from the medical profession as they formerly did. This has been brought out especially in England. The state should consider deeply whether it should invite a similar condition of affairs here—whether or not it desires an overworked, commercialized medical profession, the members of which will be unable to give the best of themselves to their work.

Dr. Lambert estimates that under the compensation bill the physicians in the panel with their allotment of 500 families will see from twenty to thirty patients per day. That is a big day's work, if done conscientiously, and will leave the physician time for little else. What would the probable income be? Dr. Lambert does not state. Judging by the fees prevailing in Europe, an estimate of from $2,000 to $3,000 would be high. If from this amount is deducted the ordinary office and automobile expense, I fear that the average physician could qualify to come under the act, under the voluntary insurance clause.

What would be the salary of the whole time medical directors, of whom there probably will be several hundred? If the chairman of the Health Insurance Commission receives $6,500, surely the several hundred whole time medical directors could not receive a similar sum. Can the state secure the services of physicians of sufficient experience and professional standing in their communities who will give up their private practices and accept whole time employment as medical directors or referees? I think not, unless the salaries are adequate—considerably more than is the salary of the chairman of the Health Insurance Commission.

Another important phase of the question is the expense. Under the law, the state would contribute two tenths of the necessary expenditure to the fund. The New York State budget for 1917 calls for approximately $72,000,000, of which $12,000,000 is to be raised by direct taxation. It is variously estimated that the state's portion, the two tenths, would be anywhere from $25,000,000 to $40,000,000, and that the general overhead expense would be about $5,000,000. Let us assume that the lowest estimate, $25,000,000, would be sufficient, and let us concede that this amount of money could be raised without difficulty; is it desirable even then that the state should spend so much on merely palliative health measures? Consider the incalculable benefit which would accrue to the state if only a small percentage of the foregoing amount were spent for real preventive measures—for work in tuberculosis and the establishment of sanatoriums; for laboratories in the aid of diagnosis, and for the manufacture of vaccines and serums; for sanitary measures to eradicate typhoid; for the establishment of colonies for the care of our mental defectives; for educational propaganda among the masses along the lines of prevention of infectious diseases; the early diagnosis and treatment of cancer, and the disastrous effects of drugged alcoholic "patent" remedies. The chief difficulty, however, in the way of the adoption of such activities is that there is little room in them for politics and politicians, while the compulsory health insurance bill opens a new and inviting field to practical politicians.

Without question some form of health insurance, perhaps compulsory health insurance, is desirable; but a plan of compulsory health insurance without the complex scheme involving the commercializing of the medical profession would be more desirable. S. J. APPELBAUM, M.D., Rochester, N. Y.

HARVEY LABORATORY FOR RESEARCH IN BLOOD PRESSURE

To the Editor:—In the February, 1917, number of the *Medical World*, a medical monthly published in Philadelphia, there appeared an article under the title, "An Effort to Standardize Myocardial Capacity with Reference to Early Diagnosis of Tuberculosis." The article was signed Harley Stamp, M.D., Harvey Laboratory for Research in Blood Pressure, University of Pennsylvania.

I wish to call attention to the fact that there is no such laboratory at the University of Pennsylvania, and also that the name of Harley Stamp does not appear in the Directory of the American Medical Association. I believe that the title M.D. is an assumed one. Harley Stamp does hold, I am told, the degree of A.B. from the University of Pennsylvania, and he has been working in the Zoology Laboratory of the University of Pennsylvania. Carved on the walls of this laboratory are the names of a number of celebrated biologists and anatomists—among them the name of Harvey. Stamp's work was done, I believe, at a window under the name of Harvey, and this seems to be the only excuse offered for the creation of this make-believe laboratory—truly an easy way of starting a new research laboratory.

WILLIAM PEPPER, M.D., Philadelphia.
Dean, University of Pennsylvania, School of Medicine.

[COMMENT.—Harley Stamp seems to have had considerable newspaper notoriety. According to the Boston *Globe*, he was at one time dean of the American College of Neuropathy, an institution which in 1911 occupied two small rented rooms on the top floor of an old building on Broad Street, Philadelphia, the equipment of the rooms being in keeping with the rooms themselves. Notwithstanding the fact that this college had no enforced entrance standard, practically no laboratories or teaching material, the fees charged were $150 per year. In 1915, he sued the estate of a patient for $30,000 alleged to be due under a contract by which he claimed he was to receive $34,000 for two years' service in treating the patient.]

FOOD SHORTAGE: AN APPEAL TO PHYSICIANS

To the Editor:—A food shortage without precedent confronts the United States. Unless there is a change for the better, the coming winter will see prohibitive high prices and consequent suffering from lack of food. The physicians of the United States, as guardians of the public health, are vitally interested because the health and the vitality of the people are at stake. It is in the power of the physicians to help relieve the food shortage by taking the lead in teaching people how to conserve the food supply. It must not be forgotten that conservation of the food supply is just as important and just as necessary as is increased production. Physicians cannot very well increase the production of foodstuffs, but on the conservation side of the problem they can be of inestimable service to the nation.

It is generally recognized that people eat too much. As a nation we are more inclined toward "living to eat" than toward "eating to live." The physicians, better than any others, can discourage this habit of overeating.

Knowledge of what constitutes properly balanced rations is not widespread. Housewives have not yet had opportunity to absorb the information gained through scientific study of the food problem by experts in domestic science. The result is that the American dinner table contains much that is unnecessary and often lacks things which should be there. The physicians of the land can correct this. They can spread corrective propaganda among millions of people, and they will be heeded because of the position of trust they occupy in American families.

Correct dieting on the part of American people is of paramount importance as a measure to guard against the food stringency that faces us. We must stop the waste of food by learning how to maintain our health and our strength on less than we are now consuming. In a word, I mean we must begin eating to acquire a proper amount of nourishment instead of eating just to fill up. We must make a study of the nutrition in various foods and find out what will give the amount of nourishment we really need. When we have learned these things, our housewives can begin serving us with meals that will satisfy the appetite and provide us with plenty of nourishment without entailing any waste. With the waste eliminated, the food problem will be practically solved.

There is no doubt in my mind as to ability of the physicians of the nation to make themselves of prime importance in this fight to conserve the food supply. They have the necessary information and they have at their disposal the channels through which it can best be disseminated among the people of the land.

An old adage says, "Go to the busy man to get things done." Appealing to the physicians to help the food conservation movement is surely carrying out the thought in the adage. The physicians will do their "bit" for the fighting forces of the nation. We confidently expect the medical corps to outstrip their European contemporaries in solving the surgical and medical problems of the battlefield and the camp. But it is as necessary to have food as it is to have live soldiers, even in a time of war, for without food there would soon be no live soldiers.

Therefore the "bit" that the physicians can do for their country is not limited to the service they can render to the army on the battlefield. They can serve the army in binding up its wounds, and they can serve the nation by showing it how to conserve food through the intelligent use of a smaller quantity than is now being consumed.

As one familiar with the food situation, I can say that the public has not yet been sufficiently impressed either with the need for more production or with the necessity for more economical handling. This is a time when one can do things that would seem presumptuous in normal times. Under that right, I call on the physicians of the United States to interest themselves in the food conservation campaign and to do all in their power to advise the public as to the imperative need for conserving, to the greatest possible degree, the food supply of the nation.

By preventing waste now, we can avert hunger later on.

J. Ogden Armour, Chicago.

MOTILITY OF SPERMATOZOA

To the Editor:—In the Current Comment on "The Function of the Prostate" (The Journal, Feb. 17, 1917, p. 553), it is stated that "it has been noted that the spermatozoa are practically motionless while in the seminiferous tubules of the testis, but become actively motile in the vas deferens, or when mixed with prostatic secretion."

The statement that spermatozoa are motionless in the testicle and epididymis, and do not gain motion till they have left these organs, has been copied for years from one textbook into another, and will probably be repeated without investigation or challenge for some time to come, although it is incorrect.

Several years ago, while investigating the subject of sterility in both sexes, I frequently aspirated the testicle in both normal and pathologic cases, and found normal moving spermatozoa in the aspirated fluid thus obtained. I have called attention to this fact emphatically in my work on sterility published over four years ago. I do not claim any priority to the knowledge of this fact, but have frequently called attention to my surprise at the statement so frequently made that spermatozoa are motionless till they get beyond the epididymis, because Martin, many years before my book was published, stated that in his classic operation of epididymovasostomy for sterility he found live motile spermatozoa on the testicular side of the epididymis before proceeding with his anastomosis. As a matter of fact, in some of the lower animals, impregnation has been successfully performed by the injection of the pure aspirated testicular fluid into the genitals of the female.

Max Hühner, M.D., New York.

THE VINELAND EXPERIENCE WITH PINEAL GLAND EXTRACT

To the Editor:—In the *Medical Record*, May 10, 1913, in collaboration with Dr. Walter S. Cornell, I reported the results of an experiment with pineal gland extract conducted under the direction of Drs. C. L. Dana and William N. Berkeley of New York. Twenty-five children were chosen to whom the gland should be given. Each child was then paired with a control who was not given treatment but was weighed, measured and examined, as were the subjects.

Our report made at the end of two months' treatment states that (p. 42) "while the improvement was not great and indeed not great enough to be of itself very significant, it was nevertheless felt that it was sufficient to continue the experiment." The gland was therefore administered for another two months. Our conclusion at the end of our experiment, as stated on page 48 was: "On the whole, one cannot but feel that there is a distinct influence in the extract toward mental improvement. However, all such experiments are subject to so many disturbing factors that it seems necessary, in view of the slight gain recorded, that the experiment should be continued for a longer time." It was never expected that this experiment was more than a "try-out," which might show some positive results in case the gland had some powerful effect, such, for instance, as the thyroid is known to have on the cretin type, and if at the same time we were fortunate enough to include suitable types in our group.

One of the patients who made consistent improvement, both mentally and physically, and consequently seemed most likely to be a suitable case for the treatment was a little girl, aged 8 years, with a mentality of 3 when we began the experiment in August. At the close of the experiment she tested 4. This was a gain of one year in four months. Because of this result in her case she was later selected for a more elaborate experiment. This was carried on under the direction of Dr. Amos W. Peters, then biochemist in the Vineland Laboratory. Unfortunately, the details of this experiment are not on file in this department. Suffice it to say that the experiment was carried on under the most rigid scientific regulations. The child was observed, weighed, measured and tested, for a period, under her ordinary institution environment. She was then brought to the laboratory to live and given special diet, the observations being continued. After what might be called her "normal curve" was established, she was fed the pineal gland extract for about six months; then the medication was discontinued and she was again observed for another period. It is now about fifteen months since the experiment ceased entirely, and probably twenty months since the last administration of pineal gland extract. There was no marked change in her growth curve during the period of pineal administration, nor does there seem to be any after-effect as evidenced by her physical condition at the present time. Mentally there has been no change since March, 1912, at which time she tested 5. This is confirmed by the resident physician, by the teachers and attendants who report no noticeable improvement in her.

As the result of this experiment it was the opinion of Dr. Peters, as he expressed it to me, that the drug was practically inert.

There were no cases of the Mongolian type of imbecility included in the experiment with the twenty-five children.

Since the Mongolian type of imbecility is one that suggests glandular disturbance to many persons, it was thought worth while to make a crude experiment with them. Accordingly, two children were selected during the past year and given the extract, one for a full year, the other for six months. The first was a child, aged 10 years, with a mentality of 4; the second, aged 9 years, with a mentality of 3. For the first month one capsule a day was given, after that the dose was increased to two capsules a day. The results tend to confirm the previous experiment. Although mental and physical measurements were made regularly in these cases, there is no evidence of any effect of the gland. Teachers and attendants report the same experience of "no noticeable improvement."

It is thus seen that the Vineland experience, as far as it goes, is wholly negative.

HENRY H. GODDARD, Vineland, N. J.
Director, Department of Research, the Training School.

"THE 'OPEN DOOR' IN CHINA"

To the Editor:—Attention having been called to your editorial in the issue of March 31, entitled "The 'Open Door' in China," the Medical Society of South Carolina at its last meeting adopted the following resolutions and communicated them to the Department of Commerce:

"That the Medical Society of South Carolina expresses its surprise at and disapproval of 'Special Consular Report No. 76' entitled 'Proprietary Medicine and Ointment Trade in China' published by the Bureau of Foreign and Domestic Commerce of the Department of Commerce"; and

"That this resolution be communicated to the Department of Commerce."

HENRY P. WAGENER, M.D., Charleston, S. C.
Secretary, Medical Society of South Carolina.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

EARLY WORKERS ON ANTHRAX

To the Editor:—Please let me know whether the following men were veterinarians or physicians: Chabert, 1780; Barthélemy, 1823; Rayer; Davaine, 1849; Pollender, 1850; Delafond, 1860; Solleysel, 1664. I have given the dates approximately when they wrote. All but Solleysel were concerned in the early work on anthrax; he worked on glanders.

MAZYCK P. RAVENEL, M.D., Columbia, Mo.

ANSWER.—Chabert, Barthélemy, Delafond and Solleysel were veterinarians.

Dr. Pollender, a physician at Wipperfurth, Rhenish Prussia, wrote the memoir on microscopic and microchemical investigation of the blood in anthrax: "Mikroskopische und Microchemische Untersuchung des Milzbrandblutes, sowie über Wesen und Kur des Milzbrandes" (*Vrtljschr. f. gerichtl. u. öffentl. Med.*, 1855, **8,** 103-114).

Casimir-Joseph Davaine, born at St. Amand-les-Eaux in 1811, graduated from the Paris Medical Faculty with the Dissertation "De l'hématocèle de la tunique vaginale" (1837); became a member of the Académie de Médecine (1868) and wrote a memoir, crowned by the Institut, entitled "De la paralysie générale ou partielle des deux nerfs de la septième paire" (1852), but never held a public position. He wrote much on the entozoa, his principal contribution being "Traité des entozoaires et des maladies vermineuses de l'homme et des animaux domestiques" (1860). His greatest contribution is his study of the bacteriology of anthrax: "Recherches sur la nature et la constitution anatomique de la pustule maligne" (*Compt. rend. Acad. d. sc.*, 1865, **40,** 1296-1299). He died at his estate at Garches (Seine-et-Oise), Oct. 14, 1882.

Biographical references:

Dureau, A.: *Bull. sc. dép. du nord*, 1882, **5,** 385-393; *Gaz. méd. de Paris*, 1882, Series 6, **4,** 521, 533.
Laboulbene, A.: *Compt. rend. Soc. de biol.*, 1884, Series 8, **1,** 1-20; Paris méd., 1884, **1,** 109, 121; *Gaz. d. hôp.*, 1882, p. 959; *Med. Times and Gaz.*, 1882, **2,** 537.

Pierre-François-Olive Rayer, born March 8, 1793, at St. Sylvain (Calvados), studied in Paris at the École pratique, Hôtel Dieu and Maison royale de Santé, graduated with the degree of M.D. in 1818, and became a member of the Académie de médecine (1823), and physician to the Bureau central des hôpitaux (1824), Hôpital St. Antoine (1825) and Hôpital de la charité (1832). He succeeded Magendie as president of the Comité consultatif de l'hygiène publique (1843), and became consulting physician to Louis Philippe (1848) and professor of comparative medicine and dean of the Paris Faculty (1862). He died at Paris, Sept. 10, 1867. His greatest works are his treatise on diseases of the kidneys (1839-1841) and the skin (1826) and his classical monograph on glanders and furcy ("De la morve et du farcin chez l'homme," Paris, 1837). He also wrote a history of the epidemic of sweating sickness of 1821 (1822), a memoir on delirium tremens (1819), a report on the origin of the Barcelona epidemic of yellow fever of 1821 (1822), and an investigation of a variety of hematuria endemic in Mauritius (1839). He became co-editor of the *Révue médicale* in 1822 and of the *Journal universelle et hebdomadaire de médecine* in 1830.

References:
Bull. de l'Acad. de méd., 1867, **32,** 1107.
Gaz. méd. de Paris, 1867, p. 3751.
Jour. de conn. méd. prat., 1867, **34,** 401-405.
Union méd., 1867, Series 3, **3,** 435; 449-458.

TREATMENT OF HORDEOLUM

To the Editor:—I wish some information regarding the most recent and best treatment for hordeolum or stye. I have a nephew, aged 5, who has had at least thirty or forty styes within the past year. I have used the various methods of treatment, alteratives, syrup of iodid of iron, etc. Do you think the cause may be due to some error of refraction?

J. P. BRANDON, M.D., Essex, Mo.

ANSWER.—Where there have been so many recurrences of styes as in this case, the causative agent is possibly a chronic blepharitis. This condition, by causing accumulation of scales and crusts on the borders of the lids, favors the multiplication of bacteria that are always present there, and which can thence readily penetrate into the orifices of the glands. The border of the lid may be swollen and this may cause occlusion of the excretory ducts of the glands. If the stye does not yield to abortive treatment (hot applications and antiseptic lotions), it should be incised. Ointment of yellow mercuric oxid is useful in the treatment of blepharitis. General tonic treatment is indicated, especially if the patient is anemic or scrofulous. In this particular case it would probably be wise to put the eyes thoroughly under the influence of a cycloplegic, and determine the absolute refraction.

FROSTILLA

To the Editor:—Please give me the composition of the "patent medicine" known as "Frostilla," a lotion for chapped hands. Please omit name.

K.

ANSWER.—The only reference we find is in "Secret Nostrums and Systems," quoting from the *Druggists Circular:*

Quince seeds	60 grains
Hot water	21 ounces
Glycerin	6 ounces
Deodorized alcohol	5 ounces

"Place the quince seeds in a bottle, pour the hot water on them and agitate occasionally until a mucilage is formed; then strain through muslin. To this add the glycerin and shake thoroughly. Dissolve the desired perfume in the alcohol and add the solution to the mucilage and agitate briskly until of a uniform consistency."

VALUE OF ACTINIC LIGHT RAYS IN DERMATOLOGY

To the Editor:—Will you kindly favor me with your opinion of the therapeutic value of actinic light rays, particularly in dermatology, as produced by the "Hereaus Quartz Light" apparatus, made by the Hanovia Chemical and Manufacturing Company, Newark, N. J.? I contemplate purchasing one of these machines, but as they are rather expensive, and the claims of the manufacturers are rather extravagant, I should like to have a disinterested and competent opinion.

Z. FULLER, M.D., Sac City, Iowa.

ANSWER.—The quartz light apparatus made by the Hanovia Chemical Company is a bona fide ultraviolet ray apparatus. It has some useful functions in dermatology. It is valuable in a few dermatoses, but, according to experience, its usefulness is limited and a very great deal more restricted than the claims of its makers would indicate.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 8-9. Sec., Dr. T. J. Stout, Brinkley, Ark.

ARKANSAS, ECLECTIC: Little Rock, May 8. Sec., Dr. C. E. Laws, 803½ Garrison Ave., Fort Smith.

ARKANSAS, HOMEOPATHIC: Little Rock, May 8. Sec., Dr. Scott C. Runnels, Little Rock.

GEORGIA: Atlanta and Augusta, May 31-June 2. Sec., Dr. C. T. Nolan, Marietta.

HAWAII: Honolulu, May 7-10. Chairman, Dr. K. W. Benz, 1141 Alakea St.

ILLINOIS: Chicago, June 14-16. Sec., Dr. C. St. Clair Drake, Springfield.

LOUISIANA: New Orleans, June 7-9. Sec., Dr. J. A. Henderson, 921 Canal St., New Orleans.

MASSACHUSETTS: Boston, May 8-10. Sec., Dr. Walter P. Bowers, Room 501, No. 1 Beacon St., Boston.

MICHIGAN: Ann Arbor, June 12-14. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MINNESOTA: Minneapolis, June 5-8. Sec., Dr. Thomas S. McDavitt, Lowry Bldg., St. Paul.

NEVADA: Carson City, May 7. Sec., Dr. S. L. Lee, Carson City.

NEW YORK: Albany, Buffalo, New York, and Syracuse, May 22-25. Sec., W. J. Denno, Education Bldg., Albany.

OHIO: Columbus, June 11-14. Sec., Dr. George H. Matson, State House, Columbus.

OREGON: Portland, June 5. Sec., Dr. Herbert S. Nichols, Corbett Bldg., Portland.

SOUTH CAROLINA: Columbia, June 12. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

TENNESSEE: Knoxville, Memphis and Nashville, June 15-16. Sec., Dr. A. B. De Loach, Scimitar Bldg., Memphis.

California January Report

Dr. Charles B. Pinkham, secretary of the Board of Medical Examiners of the State of California, reports that at the examination held at Sacramento, Jan. 9-10, 1917, 43 candidates were licensed through reciprocity, 3 were granted drugless practitioner's license, including 1 osteopath, and 1 was granted a license under a special exemption clause. The following colleges were represented:

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Bennett College of Eclectic Medicine and Surgery		(1907)	Illinois
College of Physicians and Surgeons, Chicago		(1898)	Nebraska
		(1898) (1902)	(1908) Washington
		(1905)	Illinois
Hahnemann Med. Coll. and Hosp. of Chicago		(1893)	Colorado
		(1905)	(1914) Illinois
Hering Medical College		(1906)	Illinois
Northwestern University		(1908)	(1913) Illinois
Rush Medical College		(1882) Nebraska;	(1904) Illinois
Indiana University		(1910)	(1911) Indiana
State University of Iowa College of Medicine		(1884)	Iowa
		(1902)	N. Dakota
Kentucky School of Medicine		(1888)	Alabama
Johns Hopkins University		(1912)	Maryland
University of Michigan Medical School		(1879)	(1912) Michigan
		(1892) Montana;	(1904) Washington
University of Minnesota		(1900) Minnesota;	(1903) Washington
Central Medical College of St. Joseph		(1895)	Colorado
Kansas City Medical College		(1905)	Washington
Medico-Chirurgical College of Kansas City		(1903)	Arizona
National University of Arts and Sciences		(1915)	Missouri
St. Louis College of Physicians and Surgeons		(1906)	Penna.
		(1913)	Missouri
New York Homeopathic Medical College and Hospital		(1905)	New York
New York Medical College and Hospital for Women		(1885)	Mass.
Eclectic Medical College		(1906)	Texas
Ohio Medical University		(1895)	Ohio
University of Wooster		(1875)	Nebraska
Western Reserve University		(1911)	Ohio
Jefferson Medical College of Philadelphia		(1902)	Penna
		(1908)	Dist. Colum.
University of Pennsylvania		(1908)	New Jersey
University of Vermont		(1903)	New Hamp.
Shunu Med. Coll., Kumamoto*		(1894)	Hawaii

College	LICENSED UNDER SPECIAL EXEMPTION CLAUSE PASSED	Year Grad.	Total No. Licensed
Bellevue Hospital Medical College		(1898)	1

* No such medical college named on official list of Japanese Medical Colleges. See THE JOURNAL A. M. A., Sept. 4, 1915, p. 897.

North Dakota January Report

Dr. George M. Williamson, secretary of the North Dakota State Board of Medical Examiners, reports the oral, practical and written examination held at Grand Forks, Jan. 2-5, 1917. The total number of subjects examined in was 13; total number of questions asked, 110; percentage required to pass, 75. The total number of candidates examined was 4, all of whom passed. Eleven candidate were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Rush Medical College		(1915)	90
University of Illinois		(1916)	76.4
Long Island College Hospital		(1910)	75.1
Manitoba Medical College		(1915)	75

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery		(1908)	Illinois
Rush Medical College		(1914)	Illinois
University of Illinois		(1915)	Minnesota
Fort Wayne College of Medicine		(1898)	Minnesota
University of Minnesota		(1903) (1913) (1914) (1915, 2)	Minnesota
St. Louis University		(1910)	Illinois
University of Christiania		(1912)	Minnesota

Pennsylvania January Report

Mr. N. C. Schaeffer, secretary of the Pennsylvania Bureau of Medical Education and Licensure, reports the written examination held at Philadelphia, Jan. 9-11, 1917. The total number of subjects examined in was 5; total number of questions asked, 50; percentage required to pass, 75. The total number of candidates examined was 71, of whom 66 passed and 5 failed. The following colleges were represented:

College	PASSED	Year Grad.	Total No. Licensed
University of Louisville		(1911)	1
College of Physicians and Surgeons, Baltimore		(1914) (1915)	2
Eastern University		(1913)	1
Johns Hopkins University		(1914)	1
University of Maryland		(1915)	1
Columbia University		(1912)	1
New York Homeopathic Med. Coll. and Flower Hosp.		(1915)	1
University of Buffalo		(1913) (1914)	2
Eclectic Medical College		(1915)	2
Western Reserve University		(1915)	1
Jefferson Med. Coll. of Philadelphia		(1914, 7) (1915, 15)	22
Medico-Chirurgical Coll. of Phila.		(1914, 1) (1915, 14)	15
Temple University		(1914) (1915, 5)	6
University of Pennsylvania		(1913) (1914, 2) (1915, 3)	6
University of Pittsburgh		(1915)	1
Woman's Medical College of Pennsylvania		(1915)	2
Medical College of Virginia		(1915)	1

College	FAILED	Year Grad.	Per Cent.
College of Physicians and Surgeons, Baltimore		(1915)	69.2
Maryland Medical College		(1912)	52, 70.8
Jefferson Medical College of Philadelphia		(1915)	71.4
Medico-Chirurgical College of Philadelphia		(1915)	71.8

Wisconsin January Report

Dr. John M. Dodd, secretary of the Wisconsin State Board of Medical Examiners, reports the practical and written examination held at Madison, Jan. 9-10, 1917. The total number of subjects examined in was 24; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 7, of whom 5 passed, including 2 osteopaths, and 2 failed. Five candidates were licensed through reciprocity and two candidates were granted reregistration licenses. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery		(1914)	79.6
		(1915)	77.2
Rush Medical College		(1915)	91.2

College	FAILED	Year Grad.	Per Cent.
Bennett Medical College		(1915)	71.5
Chicago College of Medicine and Surgery		(1915)	69.5

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Bennett Medical College		(1913)	Illinois
State University of Iowa College of Medicine		(1905)	Iowa
University of Minnesota		(1907)	Minnesota
St. Louis University		(1912)	Missouri
University of Pennsylvania		(1907)	Illinois

Hawaii January Report

Dr. K. B. Porter, secretary of the Hawaiian Territorial Board of Health, reports that the following candidates were licensed at the examination held Jan. 8-11, 1917.

College	PASSED	Year Grad.	Total No. Licensed
Rush Medical College		(1905)	1
Harvard University		(1914)	1
Aichi Prefecture, Special Medical School		(1914)	1

Social Medicine, Medical Economics and Miscellany

INSANITY IN THE PHILIPPINES

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MANILA, P. I.

About 4,500 insane are reported at present in the Philippine Islands, distributed thus by provinces: Bohol, 463; Cebu, 343; Pangasinan, 270; Tayabas, 227; Leyte, 167; Oriental Negres, 163; Ilocos Sur, 146; Iloilo, 142, and so on down to Isabela with only 3. About 800 are cared for in institutions for the insane.

According to race there are seven Americans, fifteen Europeans, and thirteen Chinese and miscellaneous, all the others being Filipinos; 2,700 are male, and 1,800 female.

An analysis made recently of 650 deaths and discharges from hospital gave about the results shown in Table 1. The mention of "cures" among alcoholics and opium users means, of course, only that the patients left the hospital in good condition, and, temporarily at least, free from the habit. Practically all of the alcoholics were Caucasians.

TABLE 1.—DIAGNOSES IN SIX HUNDRED AND FIFTY CASES

Diagnosis	Cured	Improved	Unchanged	Died	Total
Mania, manic-depressive insanity etc.	63	111	28	43	245
Dementia, feeblemindedness, etc.....	0	30	13	88	131
Melancholia	13	25	2	7	47
Paranoia	0	0	4	0	4
Epilepsy	0	0	3	0	3
Observation and miscellaneous	1	1	23	3	28
Opium habit	27	0	0	0	27
Alcoholism	161	0	0	4	165
Total	265	167	73	145	650

A series of 358 insane in the hospital were found to be suffering from the different forms of mental trouble shown in Table 2.

TABLE 2.—FORMS OF MENTAL TROUBLE

Diagnosis	Male	Female
Melancholia-mania, manic-depressive insanity	140	32
Dementia praecox, paranoia, paranoid forms.....	110	28
Epileptic insanity	16	1
Alcoholic insanity	7	0
Senile dementia	3	2
Opium habit	2	0
Miscellaneous and unclassified.....	15	2
Total	293	65

It may be seen from these tables that the forms of mental diseases in the Philippine Islands do not differ essentially from those in the United States or other countries, as regards either classification or numbers in each division.

If we place the number of inhabitants in the Philippine Islands at about 8,000,000, it will be seen that the proportion of insane is about 1:1,800, or only about 562 to 1,000,000 of population; whereas the United States and Great Britain have over 3,000 per million, including both insane and idiots. It should be remembered, however, that the number of insane usually increases in proportion with the completeness of statistics.

At present those under institutional care in the Philippine Islands include the criminal insane and the more violent cases. It is hoped that shortly a new pavilion for the milder cases will be erected at San Lazaro.

The condition of the insane has improved greatly during the last fifteen years, not only as regards the number treated in institutions and otherwise, but also as to the general attitude adopted by relatives and friends. The common superstitious beliefs regarding the insane are well known; but it is only rarely at this time that these patients are regarded as other than sick persons and treated accordingly. Those in the hospital do a good deal of work in the garden and around the grounds, and also along industrial lines, making such articles as slippers, belts, baskets, mats, and clothing for themselves and other patients.

Insane Filipinos are comparatively docile and easily handled, much more so than an equal number of Caucasian insane, as they are not as strong physically, and perhaps not of as aggressive a diposition in general. It is naturally less difficult to care for the mentally afflicted here than in the United States, as the question of heating requires no attention, and ventilation almost takes care of itself, all buildings being made as open as possible. Clothing is also much simpler, and necessary bedding not nearly so abundant or elaborate.

There are only two asylums for the insane in the Philippines, both in Manila; they are the Hospicio de San José, a church institution, with a branch in Cavite, and San Lazaro Hospital, which is the regular government insane asylum, also being the officially designated institution for reception of criminal insane. It is obvious that more accommodation for the insane is needed, and it will without doubt be furnished in the near future.

Fixing Nitrogen

John E. Bucher of Brown University in a recent address before the Institute of Chemical Engineers advanced some new ideas for the fixation of nitrogen. This means getting nitrogen from the air into chemical combination so that it may be used for the production of chemicals, dyestuffs, explosives, fertilizers, and generally in chemical industry. Methods have been devised, but have hitherto been expensive and complicated. Bucher has discovered that nitrogen will combine with an alkali and carbon in the presence of iron as a catalyst and produce the cyanid of the alkali. From the mixing of soda ash with either powdered iron or iron ore and powdered coke and heating in an ordinary furnace with a stream of air through the furnace, sodium cyanid results, with the iron uncombined. No electric power is needed, no costly materials, and no expensive special apparatus. When the sodium cyanid is treated with steam, sodium bicarbonate and ammonia result, and in the latter the chemist has the fixed nitrogen from which he can make fertilizer or some other product containing nitrogen. By introducing into a solution of the sodium cyanid waste gas from the furnace containing carbon dioxid, urea is produced, which is three times as rich in nitrogen as sodium nitrate and twice as rich as ammonium sulphate, both of which are used as fertilizer and play an important rôle in food production. Sodium cyanid when treated with an electric current separates into metallic sodium and cyanogen. There is a large demand for the former in chemical industry, and the latter is rapidly absorbed by hydrochloric acid and becomes oxamid, which contains nearly one-third nitrogen, and on account of its slow solubility in the soil, should, it is said, make an ideal fertilizer. Heretofore urea and oxamid have been too expensive for use as fertilizers, but Bucher's ideas open up great possibilities in this line, as well as in others requiring the employment of nitrogen.

A Case of Quintuplets

W. Martin reports, in the *British Medical Journal*, March 17, 1917, the case of a woman, aged 39, who bore five babies in one labor. The woman was one of a family of eight children, with no history of multiple pregnancies, except that a sister had twins once. The husband was one of a family of six with no history of multiple pregnancies. The labor began at 9 p. m. and terminated with the birth of the fifth child at 3:48 the next morning. A quarter of an hour later the placenta was delivered, which was in one large mass, with five separate sacs, each of which presented in succession during the labor and was ruptured by Martin. The children were well formed, about 8 to 12 inches in length, and were all born alive. Four were boys. They lived for periods varying from one and a half to twenty-eight hours. The amount of liquor amnii was enormous. The mother had a normal puerperium. The labor took place in the eighth month and it was her eighth pregnancy. All of the other children were living.

Medicolegal

Duty of Employers to Furnish First Aid as Well as Surgical Assistance

(Hunicke vs. Meramec Quarry Co. (Mo.), 189 S. W. R. 1167)

The Supreme Court of Missouri, Division No. 1, in reversing a judgment that was rendered in favor of the defendant, says that this action was brought to recover damages for the death of an employee (who had been most grievously injured while in the service of the defendant) through the alleged negligence of the latter in not furnishing him with prompt emergency or first aid assistance and surgical assistance on that occasion. There was but one legal proposition presented by the record for determination, and that was with reference to the correctness of a ruling refusing an instruction to the jury, asked by counsel for the plaintiff, and the giving in lieu thereof, for the plaintiff, of a somewhat different instruction, and the giving of one in harmony therewith for the defendant. The only material difference between the instruction asked by the plaintiff and those given by the court for the plaintiff and the defendant was that the former told the jury (1) that it was the duty of the defendant to render to the injured employee such emergency or "first aid" assistance as was reasonably possible under the circumstances in order to stop the flow of blood, and also (2) that it was the duty of the defendant to furnish him with such medical and surgical assistance as was reasonably possible under the circumstances, while the instructions given for the plaintiff and the defendant eliminated the first duty mentioned, and submitted only the second to the jury. That action of the trial court was clearly erroneous. It was clearly erroneous to instruct the jury that if they believed and found from the evidence that after the employee was injured the defendant exercised ordinary care to secure for him surgical and medical treatment at the hands of competent physicians and surgeons, then the defendant fully discharged its duty toward said employee, and was not liable to the plaintiff in this case.

Not Unlawful Grant to Association of American Medical Colleges Restriction on Osteopaths

(State vs. Bonham (Wash.), 161 Pac. R. 377)

The Supreme Court of Washington affirms a judgment of conviction of the defendant of the crime of practicing medicine and surgery without a certificate from the board of medical examiners authorizing him so to do, although he held a certificate from the board to practice osteopathy. The court says that, first of all, the constitutionality of the statute was attacked. In the language of counsel: "When the legislature of 1909 incorporated in Section 8391 of the act the following language: 'In order to procure a certificate to practice medicine and surgery the applicant for such certificate must file with said board, at least two weeks prior to the regular meeting thereof, satisfactory testimonials of good moral character, and a diploma issued by some legally chartered medical school, the requirements of which shall have been at the time of granting such diploma in no particular less than those prescribed by the Association of American Medical Colleges for that year,' they granted to the Assn. Am. Med. Colleges, a nonlegislative body outside of the state, legislative functions, and by so doing aimed to establish a medical hierarchy, which would control the people from birth to death. The bureaucratic rule which it hoped to secure by the passage of that section is un-American in principle and despotic in spirit. It is monopolistic and tyrannical in the most offensive sense of those terms." But the court thinks it manifest that the clause quoted by counsel cannot bear the construction he placed on it. By this clause the legislature granted legislative functions to no one. It simply defined the medical schools from which an applicant to practice medicine and surgery in the state must produce a diploma before a certificate authorizing him to do so can be issued to him. The restriction may or may not be a wise one, but this is a question for the legislature and not for the courts. With the courts the question is one of the power of the legislature to impose the restriction, and this court sees no reason to question it. Again, the court thinks the restriction was not one of which the appellant (defendant) could be heard to complain. He was in no manner affected by it. He applied for and received a certificate to practice osteopathy, and was entitled to practice that profession in the manner and to the extent the certificate permitted. His second contention was that his certificate entitled him to employ for the treatment of diseased tonsils the methods employed by him in the treatment of the diseased tonsils of the patient mentioned in the information, which apparently were by administering an anesthetic (ether), placing a snare around each of the tonsils and cutting them out with a knife, in addition to which stypticin was administered. But the court holds that his right was to practice osteopathy as that practice was understood at the time the medical act was adopted, and this it concludes did not sanction the practice resorted to by him in the treatment of said patient. A perusal of the successive catalogues of the schools of osteopathy will show that their teachings are gradually being expanded, and that the more modern of them now teach in some degree much that is taught in the older schools of medicine. The parent school has been more marked in this respect than perhaps any of them. It now teaches that in "childbirth lacerations," in "certain types of congenital deformities, certain kinds of tumors, etc., surgery must step in," and that surgery must be resorted to for the removal of tissues so badly diseased or degenerated that regeneration is impossible by the process of adjustment. But this advance is modern. It was not in vogue even so late as 1909, the time of the enactment of the medical act. The framers of the latter, the court thinks, regarded the practice of medicine and surgery and the practice of osteopathy as separate and distinct methods of treating the sick and afflicted, and intended to confine the practitioners of each to the particular system he professed to practice; in other words, to the system in which he had been educated. That no definition of these terms was offered in the statute would only mean that the terms were used in their general and accepted sense, in the sense in which they were commonly understood at the time of the enactment of the statute.

Society Proceedings

COMING MEETINGS

American Medical Association, New York, June 4-8.

American Academy of Medicine, New York, June 4-5.
American Association of Anesthetists, New York, June 2.
Am. Assn. of Genito-Urinary Surgeons, Rochester, Minn., May 21-23.
Am. Climatological and Clin. Association, Lakewood, N. J., May 29-31.
American Dermatological Association, Cincinnati, May 24-26.
American Gynecological Society, Pittsburgh, May 31-June 2.
American Laryngological Association, Atlantic City, May 28-30.
Am. Laryn., Rhin. and Otol. Society, Niagara Falls, Can., June 1-2.
Am. Medico-Psychological Association, New York, May 29-June 1.
American Neurological Association, Boston, May 21-23.
Am. Ophthalmological Society, Virginia Hot Springs, May 29-30.
American Orthopedic Association, Pittsburgh, May 31-June 1.
American Otological Society, Atlantic City, May 29-30.
American Pediatric Society, White Sulphur Springs, May 28-30.
American Proctologic Society, New York, June 4-5.
American Psychopathological Association, Boston, May 24.
American Radium Society, New York, June 4.
American Society of Tropical Medicine, New York, June 4-5.
American Surgical Association, Boston, May 31-June 2.
American Therapeutic Society, New York, June 1-2.
Conference of State & Prov. Bds. of N. Amer., Washington, May 30-31.
Connecticut State Medical Society, New Haven, May 23-24.
Florida Medical Association, Atlantic Beach, May 18-19.
Illinois State Medical Society, Bloomington, May 8-10.
Iowa State Medical Society, Des Moines, May 9-11.
Maine Medical Association, Portland, June 12-13.
Massachusetts Medical Society, Boston, June 12-13.
Mississippi State Medical Association, Jackson, May 8-9.
Missouri State Medical Association, Springfield, May 14-16.
National Assn. for the Study of Epilepsy, Skillman, N. J., May 28-29.
Nat. Assn. for Study and Prev. of Tuberculosis, Cincinnati, May 9-11.
Nebraska State Medical Association, Lincoln, May 8-10.
New Hampshire Medical Society, Concord, May 16.
North Dakota State Medical Association, New Rockford, May 9-10.
Ohio State Medical Association, Springfield, May 14-16.
Oklahoma State Medical Assn., Lawton-Medicine Park, May 8-10.
Oregon State Medical Association, Portland, June 28-30.
South Dakota State Medical Association, Yankton, May 28-30.
Texas State Medical Association, Dallas, May 8-10.
Washington State Medical Association, Spokane, June 17-19.
Wyoming State Medical Society, Douglas, May 9.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal

April 12, CLXXVI, No. 15

1 Scholarship in Medicine. W. S. Thayer, Baltimore.—p. 519.
2 *Renal Calculus. G. G. Smith, Boston.—p. 524.
3 Disease Incidence in China. C. A. Hedblom, Rochester, Minn. —p. 530.
4 Lipoma of Intestine. A. H. Harrigan, New York.—p. 535.
5 Contribution to Vegetative Neurology; Touching on Heart Action, Status Lymphaticus and So-Called Vagatonia and Sympathicatonia. E. A. Tracy, Boston.—p. 538.
6 *Cause of Poliomyelitis. H. Greeley, Brooklyn.—p. 540.
7 *Nail Puncture Wounds of Foot; Results in One Hundred Cases. W. I. Clark, Worcester.—p. 541.

2. **Renal Calculus.**—In looking up the records of the thirty-four cases in which analyses of the stones were recorded, Smith found that five out of the thirty-four were bilateral. In three of these five, the disease was recurrent as well. There were no recurrent unilateral stones. In three of the five cases, the stones were practically pure phosphate stones. In the other two, the stones were composed fairly equally of phosphates and oxalates. Of sixteen cases with calcium oxalate stones, none was recurrent. It would seem, therefore, that the phosphatic stones are the ones to be dreaded, and that if dietetic measures will be of any help, they should be tried. The urine should be kept very dilute by the ingestion of much water. In addition to this, the ingestion and absorption of phosphates must be diminished. If the intake of calcium is also diminished, phosphates will be excreted as salts of sodium and potassium, which are soluble. To prevent the recurrence of phosphatic stone, one should drink freely of water, take a teaspoonful of calcium carbonate with or after meals, and avoid eggs, milk, fish and fruits. To prevent uric acid deposition, avoid highly acid urine. Eat chiefly of vegetables, fats and carbohydrates. Eat a low protein diet of purin free nature. Avoid asparagus, liver, sweetbread, kidneys, meat extracts and malt liquors, claret, etc.

6. **Cause of Poliomyelitis.**—Greeley compared the bacillus isolated by him with the "streptococcus-like" organism described by Rosenow and found them to correspond serologically and culturally. The accidental installation of a drop of a fluid culture into the eye caused an abortive attack in an experimenter and the organism was recovered in scrapings from his throat, and a suspension of the same caused paralysis in a rabbit, and, when inoculated into a guinea-pig, intraperitoneally, death within a week, with spinal cord congestion and cerebral engorgement and hemorrhage, the organism being recovered from the brain tissue. From contact (same cage) with the latter, two guinea-pigs and a young rabbit contracted the infection and died, showing the same lesions and organism. In a series of serum reactions (not yet published) in which the blood serum of animals, immunized to cultures (from cord tissue) from particular cases of human poliomyelitis, and blood from fifty cases of the recent epidemic were tested against particular cultures (including the one received from Rosenow and from distemper in dogs) evidence has been obtained indicating the existence of different strains of the organism and its intimate relationship to the organism of dog distemper. The behavior of various cultures also tends to confirm this idea, although it is not yet apparent whether these differences are as fixed as in the case of the organisms of the colon typhoid group.

7. **Nail Puncture Wounds of Foot.**—This paper represents work done at Norton Company Hospital during the year 1916. In all cases the technic was the same, though the treatment was administered by different physicians and nurses. The work having been done on employees covered by insurance, it has been possible to get accurate data on the exact duration of disability for work from the insurance company, while the hospital records give the number of dressings needed by each patient. Clark says that nail puncture wounds of the sole of the foot are not dangerous and seldom cause infection if promptly treated, when caused by clean nails projecting from a board, as occurring in the building trade and general construction. This type of wound does not produce tetanus, except possibly in very rare instances. A simple and effective method of sterilization of the puncture wound may be obtained by injecting the wound with pure tincture of iodin. These injuries, contrary to general belief, produce very little disability and require few dressings. Prompt treatment is essential in order to get the best results.

Georgia Medical Association Journal, Augusta

April, VI, No. 12

8 Use of Autogenous Vaccines. A. H. Bunce, Atlanta.—p. 241.
9 Diagnosis and Removal of Foreign Bodies from Trachea, Bronchi and Esophagus. C. L. Pennington, Macon.—p. 246.
10 First Aid in Contused and Lacerated Wounds. A. G. Little, Valdosta.—p. 248.
11 Subcutaneous Emphysema in Child. Foreign Body in Bronchi; Report of Case. H. C. Whelchel, Douglas.—p. 249.
12 Case of Tetanus Successfully Treated with Tetanus Antitoxin. F. Bird, Valdosta.—p. 250.
13 Tetanus. S. L. Vincent, Nichols.—p. 253.
14 Burns and Their Treatment; Report of Case of Phosphorus Burn. R. C. Dodson, Waycross.—p. 254.

Journal of Abnormal Psychology, Boston

February-March, XI, No. 6

15 Manic Depressive Attack Presenting Reversion to Infantilism. R. Reed, Cincinnati.—p. 359.
16 Genesis of Paranoic State. T. H. Haines, Cleveland.—p. 368.
17 Genetic Antecedents of Free Association Materials. C. S. Yoakum and M. C. Hill, Galveston, Texas.—p. 396.

Journal-Lancet, Minneapolis

April 1, XXXVII, No. 7

18 Spinal Fluid in Diagnosis, Prognosis and Treatment of Cerebrospinal Syphilis. C. R. Ball, St. Paul.—p. 209.
19 *Fractures and Dislocations of Semilunar Cartilages. F. F. Griebenow, Bismarck, N. D.—p. 214.
20 Syphilis in State of Minnesota. H. G. Irvine, Minneapolis.—p. 218.
21 School Nurse. M. A. Baker, La Moure, N. D.—p. 224.
22 Blood Agglutination; Methods and Certain Experimental Considerations. J. R. Turner, Tacoma, Wash.—p. 230.

April 15, No. 8

23 Internal Secretion of Ovary. J. L. Rothrock, St. Paul.—p. 249.
24 *Case of Systemic Blastomycosis, with Stomach as Possible Port of Entry. W. F. Sihler, T. A. Peppard, Devils Lake and J. W. Cox, University, N. D.—p. 253.
25 Pathology and Etiology of Goiter. A. Schwyzer, St. Paul.—p. 258.
26 Recent Developments in Rhinology and Laryngology. F. C. Todd, Minneapolis.—p. 263.
27 Mineral Springs Sanatorium and Medical Profession of Goodhue County. R. Bosworth, St. Paul.—p. 270.
28 Case of Pernicious Vomiting in Pregnancy. W. J. Cochrane, Lake City.—p. 273.

19. **Fractures and Dislocations of Semilunar Cartilages.**—Ten cases are reported by Griebenow. They were all injuries of the internal semilunar cartilages; five were fractures and five were displacements. The operations consisted of partial extirpation in seven cases, complete extirpation in two cases, and suturing in one case. All patients reported very satisfactory results with the exception of the one in which suturing alone was done. The fact that this patient had the poorest results, Griebenow says, is an argument for radical extirpation of the damaged cartilage. The best treatment is unquestiontionably the radical extirpation, but in a few early cases a cure or improvement for a time can be accomplished by immobilizing the joint for a number of weeks or months with plaster casts and rest in bed. Reduction should always be attempted by flexing the knee, and, in case of loose internal cartilage, rotating the tibia outward while pressing over the cartilage and then quickly rotating the leg inward with a sudden extension. In cases in which there is a posterior displacement, a fracture, or a dislocation deep in the joint, complete extirpation alone can give permanent cure.

24. **Blastomycosis, with Stomach as Possible Port of Entry.**—A case of systemic blastomycosis is described by the authors which was peculiar in that it lacked the cutaneous and subcutaneous lesions which have been quite constant in the other reported cases, and which have led to a diagnosis. It is said to be the first reported case having recurrent ascites as a finding. A stomach ulcer with the localization of the blastomycetes in the stomach wall suggest this as a portal of entry. Blastomycetes were found in the stomach wall,

liver, lymph node, urinary bladder wall, omentum, appendix and ascitic fluid; budding forms were within and without endothelial leukocytes.

Medical Record, New York

April 14, XCI, No. 15

29 Some of Commoner Deviations from Ordinary Met with in Examination of Heart of Supposedly Normal Individuals. W. S. Thayer, Baltimore.—p. 617.
30 Endocrine Neurasthenia. T. A. Williams, Washington, D. C.—p. 623.
31 Recurrence After Thyroid Operations. S. P. Beebe, New York.—p. 627.
32 Ether Hypnosis in Psychotherapy. F. R. Starkey, Detroit.—p. 631.
33 Gas Gangrene; Report of Two Cases. C. W. Roberts, Atlanta, Ga.—p. 632.
34 Importance of Roentgen-Ray Diagnosis in Dentistry. A. M. Nodine, New York.—p. 634.

Nebraska State Medical Journal, Norfolk

March, II, No. 3

35 Etiology and Pathology of Lobar Pneumonia. A. Sachs, Omaha.—p. 251.
36 Treatment of Pneumonia. E. L. Bridges, Omaha.—p. 254.
37 Chronic Alveolar Abscess as Source of Systemic Disease. W. L. Shearer, Omaha.—p. 258.
38 Roentgen Treatment of Uterine Hemorrhage. E. W. Rowe, Lincoln.—p. 261.

Northwest Medicine, Seattle

April, XVI, No. 4

39 Tuberculosis of Cecum; Report of Case. C. W. Sharples, Seattle.—p. 97.
40 *Volvulus; Report of Cases. R. E. McKechnie, Vancouver, B. C.—p. 101.
41 *Syphilis of Stomach; Report of Case. P. Rockey, Portland, Ore.—p. 103.
42 Stomach Operations in Aged. J. B. Eagleson, Seattle.—p. 106.
43 Gallbladder Disease. O. F. Lamson, Seattle.—p. 108.
44 *Osteoplastic Closure of Trifacial Foramina; Report of Cases. G. M. Horton, Seattle.—p. 112.
45 Check Ligament Operation for Recurrent Dislocations of Shoulder. E. A. Rich, Tacoma.—p. 114.
46 Social Concept or Psychosis. W. V. Gulick, Fort Steilacoom.—p. 116.
47 Report of Three Cases Showing Need of Mental Analysis. H. W. Wright, San Francisco.—p. 117.
48 Lipectomy; Report of Case. J. P. Schutt, Bremerton.—p. 118.

40. **Volvulus.**—The symptoms of one case cited by McKechnie were like what is usually found in appendicitis, with one exception. The patient had the initial pain in the epigastrium, accompanied by vomiting. In a second attack later on in the day, he had a return of this, but later, when he was examined, no tenderness was found in the epigastrium, the area complained of, but was found in the region of the appendix. The next morning he was found with tenderness and rigidity in the lower abdomen, with a weakened and quick pulse and a slightly subnormal temperature. The one symptom which is not usually found in appendicitis was the patient's greater comfort when sitting up, and especially when leaning forward. McKechnie suggests that this may possibly prove to be a pathognomonic symptom, especially if accompanied by symptoms of collapse. In this case there were no symptoms of collapse at first other than an extreme pallor but, the following morning when he was being moved to the hospital, he fainted and was in a very poor condition when he arrived at the hospital. In both cases reported the twisting was from right to left. In neither case was the occurrence preceded by any violent exercise, but in both cases there was an abnormally long mesentery and, in the case of the boy, an extremely mobile cecum and ascending colon. In both cases there was an abnormally long mesentery from birth, hence one would expect that previous attempts at the formation of a volvulus had occurred. This is proved by their histories, one of the patients, the boy, having been subject to colic, and the other patient, a man, had had similar attacks before, although not so severe.

41. **Syphilis of Stomach.**—A man had a severe gastric hemorrhage. The abdomen was opened by a median incision. On the anterior surface of the stomach near the greater curvature, about one third of the way down from the cardia, was a large gastric ulcer, about 3 inches across, and with induration about an inch thick, to part of which indurated omentum was attached, from where it extended to the spleen, to which it was also adherent. On the anterior surface of the stomach near the pylorus was a small, slightly indurated ulcer scar. All intra-abdominal lymph nodes were enlarged. Above and below the stomach one could pick up a handful of these lymph nodes. Operative diagnosis, probably syphilis. The omentum was tacked over the large ulcer as a protection, the abdominal wound was closed, and the patient put to bed. After the operation a Wassermann test was made and reported positive four plus.

44. **Closure of Trifacial Foramina.**—Horton has operated for the relief of trifacial neuralgia in four patients whose ages range from 28 to 84 years of age, by a method similar to that of Kavenel. The patient is first given a general anesthetic, an incision is made over the exit of the nerve, it is dissected free from the surrounding tissue and the nerve is then seized with a pair of Kelley forceps and by twisting is wound around the end of the forceps. The canal is now thoroughly curetted with a small curet or chisel, the edge of the foramen is chiseled through and broken down so as to close the opening. After this has been done the broken down edge is thoroughly tamped into the canal, much the same as dirt is tamped around a pole when it is set into the ground. In breaking down the edge of the foramen no attempt was made to preserve the periosteum, all being cut through with a chisel at one cut and broken over into the foramen. Considerable care was taken, however, in the tamping that all openings were covered with bone. The roentgenograms show the foramen closed.

Ohio State Medical Journal, Columbus

April, XIII, No. 4

49 Early Diagnosis of Pulmonary Tuberculosis. J. Harris, Mt. Vernon.—p. 229.
50 Significance of Diazo and Urochromogen Reactions in Pulmonary Tuberculosis. S. A. Douglass, Mt. Vernon.—p. 231.
51 Postoperative Ileus. G. Goodhue, Dayton.—p. 233.
52 Constitutional Conditions, Result of Tonsilar Infections. H. B. Harris, Dayton.—p. 235.
53 Mercury and Spinal Drainage in Treatment of Paresis. C. C. Kirk, Toledo.—p. 237.
54 Appendix. Résumé of Original Research. C. C. Waller, Warren.—p. 240.
55 Sydenham's Chorea with Special Reference to Treatment. C. F. Daniel, and G. L. Lambright, Tiffin.—p. 243.

Philippine Journal of Science, Manila

July, 1916, XI, Sec. B, No. 4

56 Relation Between Amount of Cholera Culture Injected into Gallbladder and State of Cholera Carriers in Experimental Animals. O. Schöbl, Manila.—p. 153.
57 Influence of Bile on Duration of State of Cholera Carriers in Experimental Animals. O. Schöbl, Manila.—p. 157.
58 Carbohydrate Fermentation by Bacillus Pestis, Comparing Certain American and Oriental Strains. H. W. Wade, Manila.—p. 159.

Southern Medical Journal, Birmingham, Ala.

April, X, No. 4

59 *Transmissibility of Pellagra—Experimental Attempts at Transmission to Human Subject. J. Goldberger, Washington, D. C.—p. 277.
60 *Pellagrous Intestine and Some of Its Parasites. K. M. Lynch, Charleston, S. C.—p. 286.
61 Is Average Physician Making Satisfactory Progress in Earlier Diagnosis of Pulmonary Tuberculosis? J. H. Way, Waynesville, N. C.—p. 291.
62 Cardiac Efficiency in Relation to Cardiovascular Renal Disease. J. S. McLester, Birmingham.—p. 295.
63 *Prognosis in Cardiovascular Renal Disease. G. Dock, St. Louis.—p. 298.
64 *Tuberculosis, Disease of Children. F. C. Moor, Tallahassee, Fla.—p. 300.
65 Plea and Plan for Eradication of Malaria. F. L. Hoffman, Newark, N. J.—p. 309.
66 Infantile Paralysis. W. A. Evans, Chicago.—p. 311.
67 Wassermann Test in Public Health Work. F. A. Coward, Columbia, S. C.—p. 320.
68 Cases of Gallstone, Goiter and Duodenal Ulcer. S. McGuire, Richmond, Va.—p. 324.
69 Hyperflexion (Jones) Treatment of Fractures of Elbow. D. Eve, Nashville, Tenn.—p. 327.
70 Bone Graft in Surgery. F. G. Hodgson, Atlanta, Ga.—p. 331.
71 Some Medicolegal Difficulties Met with by Railway Surgeon. J. L. Jelks, Memphis, Tenn.—p. 334.
72 Resuscitation of New-Born. R. W. Faulk, Monroe, La.—p. 337.

73 Cataract. E. C. Ellett, Memphis, Tenn.—p. 342.
74 Tonsil and Adenoid Clinic. M. M. Cullom, Nashville, Tenn.—p. 344.
75 Some Interesting Conditions Seen in Eye of Negro. C. W. Kollock, Charleston, S. C.—p. 345.
76 Modern Plague. T. W. Davis, Winston-Salem, N. C.—p. 350.
77 Hay Fever and Its Prevention in Southern States. W. Scheppegrell, New Orleans.—p. 356.

59. Abstracted in THE JOURNAL, Dec. 23, 1916, p. 1967.

60. **Pellagrous Intestine.**—In twenty-five cases examined by Lynch, the only organisms recognized constantly were small yeast cells and *Blastocystis enterocola*. *Trichomonas intestinalis* was found in fifteen cases and *Endameba coli* in twelve. The blastocystis, trichomonas and endameba were limited to the large intestine and were most numerous in the cecum. In one case scrapings from the inflamed mucosa of the cecum showed a large number of minute spirochetes within the cytoplasm of the epithelial cells. They were very small and active and practically filled many of the cells. They disappeared shortly on exposure and none was found in stained sections. This observation could never be repeated. *Blastocystis enterocola* has assumed a position of interest on account of its presence in these necropsies as well as its frequency in feces. In these necropsies it has occurred in large numbers in the inflamed portions, especially in the cecum, and has been found throughout the large intestine. It has appeared to be particularly active when the ulcer is present. A description of the parasite will be published later. While it is considered as having no pathogenic importance, it appears to be comparable to intestinal parasites such as endameba or trichomonas as an indicator of the prevalence of, and liability to, fecal contamination of the food or drink of an individual or community. No known pathogenic organism has been recognized as having any direct relationship to the "pellagrous intestine" in question.

63 and 64. Abstracted in THE JOURNAL, Dec. 23, 1916, pp. 1966 and 1967.

Texas State Journal of Medicine, Fort Worth

April, XII, No. 12

78 Outlook for Better Obstetric Practice. M. B. Stokes, Houston.—p. 456.
79 Diagnosis of Acute Osteomyelitis. W. B. Thorning, Houston.—p. 459.
80 Pyelitis in Women. C. H. Harris, Fort Worth.—p. 462.
81 Pyelitis in Children. C. R. Hannah, Dallas.—p. 465.
82 Functional Renal Diagnosis. G. T. Hall, Big Springs.—p. 466.
83 Ammonia and Acetone Content of Urine as Aids in Directing Treatment. H. L. Wilder, Clarendon.—p. 469.
84 Kidney; Its Relation to Life Insurance. G. C. Lechenger, Houston.—p. 471.
85 Significance of Albuminuria. C. H. Brooks, Waco.—p. 473.
86 Significance of Casts. P. C. Murphy, Waco.—p. 474.
87 Knocking One Another. W. D. Jones, Dallas.—p. 475.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

March, XXI, No. 10

1 Simple Methods of Jaw Roentgenography. H. A. Eccles.—p. 313.
2 History of Electrotherapy. H. A. Colwell.—p. 320.
3 Use of Repeated Roentgen Examinations for Observing Progress in Cases of Osteomyelitis. R. W. A. Salmond.—p. 327.

British Medical Journal, London

March 24, I, No. 2934

4 *Surgical Shock and Some Allied Conditions. Report of Medical Research Committee.—p. 381.
5 Medicine in Morocco. A. Tacquin.—p. 384.
6 Origin of Electric Currents Led Off from Human Body, Especially in Relation to Nerve Leaks. W. M. Bayliss.—p. 387.
7 Operative Treatment of Injury of Peripheral Nerves. J. R. White.—p. 388.
8 *Case of Enterospasm in which Portion of Intestine Involved was of Unusual Extent. C. H. Whiteford.—p. 392.
9 Practical Methods of Anesthesia. J. T. Gwathmey.—p. 393.

March 31, No. 2935

10 Infection of Hemothorax by Anaerobic Gas Producing Bacilli. T. R. Elliott and H. Henry.—p. 413.
11 Dysentery. T. J. C. Evans.—p. 418.
12 Two Cases of Heart Failure in Operating Room Treated by Heart Massage; Recovery. E. S. Molyneux.—p. 420.
13 *Relation of Peridental Gingivitis to Vincent's Angina. F. E. Taylor and W. H. McKinstry.—p. 421.
14 Abdominal Kneading in Treatment of Intestinal Stasis. J. S. Bolton.—p. 422.
15 Early Complications Resulting from Retained Bone Fragments in Case of Gunshot Wound of Head. We E. Tyndall.—p. 423.
16 Combined Suspension and Extension Apparatus for Compound Fractures about Hip. G. M. Hodges.—p. 423.

4. **Surgical Shock.**—The failure of injections of physiologic saline in fully developed shock is one of the phases discussed in this report. Experiments already made seem to indicate that better results might be obtained by the use of intravenous injections of hypertonic saline, the value of which in the treatment of cholera and bacillary dysentery is already familiar. Whether the action of these is entirely due to the passage of water into the vessels by osmosis, or in part to a restorative effect of the hypertonic solution on capillary tone, is not clear. Calcium ions have been found to have a specific action in reducing abnormal permeability of capillaries. It seems reasonable, therefore, to suggest that a fluid representing a concentrated Ringer solution should be used, rather than one in which only the proportion of sodium chlorid is increased. The following formula is suggested:

Sodium chlorid	2 gm.
Potassium chlorid	0.05 gm.
Calcium chlorid	0.05 gm.
Water	100 c.c.

8. **Enterospasm.**—Celiotomy in Whiteford's case demonstrated that the stomach was enormously distended by gas, measuring in its greatest circumference 14 inches, and that the duodenum was uniformly distended by gas (diameter 1¾ inches). The small intestine was traced downward for its whole length. The upper 3 feet of jejunum were distended by gas to the size of the duodenum. Three feet from the duodenum the jejunum became abruptly narrowed, being in a state of intense contraction. The next 3 feet of jejunum was uniformly contracted into a rugose, anemic cord half an inch in diameter. Below the spastic area the rest of the small intestine was normal, as was the large bowel.

13. **Peridental Gingivitis and Vincent's Angina.**—As the result of their investigations the authors suggest that when a patient complains of a sore throat which presents the characters of Vincent's angina it is essential to examine the tooth margins for evidence of peridental gingivitis or pyorrhea, and that smears be made from both sources for the detection of the causal organisms. When found to be present, the peridental gingivitis should be adequately treated as well as the Vincent's angina; otherwise the condition is likely to persist indefinitely and to cause repeated recurrence of the sore throat.

Dublin Journal of Medical Science

December, 1916, CXLII, No. 540

17 *Experiences of Renal Surgery. W. Taylor.—p. 361.
18 Allen Treatment of Diabetes. G. E. Nesbitt.—p. 379.

January, CXLIII, No. 541

19 Fractures and Fracture Dislocations. J. S. McArdle.—p. 1.
20 Vaccine Therapy in Treatment of Rheumatic Conditions. W. M. Crofton.—p. 4.
21 Hypnotism. C. P. Smyly.—p. 10.
22 Postmortem Findings in Two Cases of Hectic Fever. J. Moore.—p. 31.

17. **Experiences of Renal Surgery.**—Taylor has performed 138 operations on 128 patients. The operations consisted of 92 fixations, 26 total nephrectomies, 1 partial nephrectomy and 19 nephrotomies. Of the 19 nephrotomies, 5 were merely exploratory, and 14 were for the removal of calculi (in the case of one patient calculi were removed from both kidneys). There was one death. This death occurred in the case of a man whose left kidney was removed for hydronephrosis. There was nothing difficult about the operation. On the thirteenth day he was walking about. He died suddenly without warning. There were 92 fixations in 83 patients, 9 being double nephropexies. Of the 19 nephrotomies, performed on 18 patients, 14 were for the removal of calculi (in one patient calculi were removed from both kidneys), one was an exploration of the left kidney for very severe hemorrhage. The

remaining nephrotomies were undertaken in cases in which the most typical symptoms of stone were present, but the explorations were negative. Of the nephrectomies 26 were complete nephrectomies and one was partial. The latter was performed for the removal of a tumor which seemed to be growing from the lower pole of the left kidney. Of the 25 complete nephrectomies, 12 were performed for tuberculosis, 3 for hypernephroma, and 1 for a new growth, believed to be hypernephroma, but the nature of which was not definitely settled; 4 were performed for hydronephrosis, and 6 for extensive pyonephrosis.

Taylor is of the opinion that in cases in which movable kidney is unquestionably the cause of the symptoms complained of, or, when the mobility is leading to actual renal pathologic changes, active treatment is demanded, and nephropexy is undoubtedly preferable to the use of any mechanical apparatus. Calculi, once diagnosticated, should be removed by operation without delay, otherwise destruction of the kidney will inevitably occur sooner or later. Tuberculosis of the kidney is best treated by nephrectomy performed as soon as possible after the diagnosis has been effected, and if possible before secondary infections have occurred elsewhere. The prognosis of nephrectomy for hypernephroma, if performed before secondary deposits have occurred in other parts, is exceedingly favorable. Partial nephrectomy is an operation of very limited usefulness, but under certain conditions it is quite a safe and satisfactory procedure.

Glasgow Medical Journal

March, LXXXVII, No. 3

23 Popular Customs and Superstitions in Connection with Puberty and Obstetrics in Central Europe. G. B. Marshall.—p. 129.
24 Some Frightful Wounds of War. A. G. Faulds.—p. 144.
25 Residual Urine in Senile Bladder, with Special Reference to Conduct of Case so as to Postpone or Avoid Use of Catheter. D. Newman.—p. 153.

Journal of Laryngology, Rhinology and Otology, London

March, XXXII, No. 3

26 Unilateral Blindness, Associated with Cystic Distention of Maxillary Antrum of Same Side. G. H. Pooley and G. Wilkinson. —p. 81.
27 Lateral Sinus Disease; Infection of Meningeal Spaces; Recovery. A. Ryland.—p. 85.

Journal of Tropical Medicine and Hygiene, London

March 15, XX, No. 6

28 Clinical Features of Diseases Prevalent in Upper Nile and Sobat Pibor District. T. Lambie.—p. 61.

Lancet, London

March 24, I, No. 4882

29 Modern Aspects of Heart Disease. G. A. Sutherland.—p. 437.
30 Soldier's Heart. A. Abrahams.—p. 442.
31 *Important Principles in Drainage and Treatment of Wounds. W. Pearson.—p. 445.
32 *Influenza Epidemic of Spring, 1915; with Special Reference to Anomalous Throat Signs. A. G. Shera.—p. 450.
33 Nervous Factor in Relation to Ophthalmic Conditions. T. E. Harwood.—p. 452.
34 Calcified Fibroid Causing Complete Axial Rotation of Uterus. C. H. Roberts.—p. 454.
35 Calcified Adenoma of Thyroid. V. Pennell.—p. 454.
36 Obscure Case of Psoas Abscess. E. A. Constable.—p. 454.

March 31, No. 4883

37 Modern Aspects of Heart Disease. G. A. Sutherland.—p. 477.
38 *Experiences with Emetin Bismuth Iodid in Amebic Dysentery, Amebic Hepatitis, and General Amebiasis. G. C. Low.—p. 482.
39 Case of Psychasthenia with Criminal Impulses. W. N. East.—p. 486.
40 Excision of Retropharyngeal Gland; Report of Two Cases. N. Patterson.—p. 487.
41 Principles of Transfusion of Blood. A. E. Stansfeld.—p. 488.
42 Technic of Preparation of Culture Media Containing Albuminous Fluids. P. Fildes.—p. 492.
43 Case of Shell Wound of Heart Causing Complete Heart Block. C. E. Lea.—p. 493.
44 *Metabolism in Gout. W. Bain.—p. 494.

31. **Drainage and Treatment of Wounds.**—Efficient mechanical drainage in Pearson's opinion is the essential factor in the successful treatment of infection. He says that the cardinal principles governing drainage are: freedom of exit; gravity; capillary action. Drainage tubes should not be employed unnecessarily. They should effect the purposes for which they are used, and should not act injuriously in the wound. Dressings should not be tight, of close texture, or waterproof. They should be exposed to the air while discharge is profuse. Continuous irrigation aids disinfection by mechanical removal of discharge. It is usually not feasible when dealing with large numbers of cases. It is not necessary in order to obtain good results. Free administration of fluids to the patient is an important adjunct in the treatment of sepsis. The value of concentrated saline solutions and antiseptics as aids to disinfection is doubtful and negligible. The use of salines and antiseptics in no way diminishes the necessity for free mechanical drainage. Vaccines are not helpful in dealing with infections in wounds of war. Rest is an important factor in wound treatment and should never be neglected. Most of the complications and sequelae of infection are due primarily to inefficient mechanical drainage, and are therefore preventable. Delay in healing is almost invariably due to local mechanical causes.

32. **Influenza Epidemic and Anomalous Throat Signs.**—In no case examined with a typical influenza syndrome did Shera fail to find that the soft palate, uvula and posterior pharyngeal wall invariably showed some vesicles about the size of a pin's head, and nearly always accompanied by erythema; in fact, this throat syndrome was pathognomonic in this particular epidemic of influenza. Shera explains this by stating that the influenza toxin spreads centripetally along the sensory nerve tracts, expending itself on the first footholds, that is, pharyngeal mucosa and its substructures and then passes to the palatine nerves. The effect of the virus is inflammatory; on a mucous surface it causes a vesicular eruption ("vesicular neuritis"), while deeper down it causes similar inflammatory changes, giving rise to pain. The virus spreads far into the central nervous system, even poisoning the vagal or sympathetic nerves. Tachycardia and bradycardia are well known sequelae. The cerebrum shows the aftermath of influenza in a varied and sometimes to a sinister degree. The theory of centripetal diffusion of the toxin via the neurones seems borne out by the rarity of influenzal septicemia as compared with the frequency of neuralgia, etc., in influenza.

38. **Emetin Bismuth Iodid in Amebic Dysentery, etc.**—A study of a series of cases has convinced Low that emetin given by the mouth, as emetin bismuth iodid, is apparently as efficient as emetin by the needle in cases of amebiasis with liver involvement. These facts must mean that sufficient emetin is absorbed into the general circulation to act on the parasites in the liver, it being conceded, of course, that parasites are actually there when hepatitis, enlargement of the liver, and leukocytosis are present, the precursors of a definite abscess formation. The advantage of oral administration over hypodermic in such cases would seem to consist of the more potent sterilizing powers ultimately shown by the double iodid on the amebae in the bowel, thus removing a possible source of subsequent reinfection of the liver. Three grain doses every night for twelve consecutive nights (36 grains in all) is good treatment. Not less than 36 grains in all should be given, as smaller quantities are generally followed by relapse.

44. **Metabolism in Gout.**—Bain found that the excretion of calcium in the urine of patients with gout is lower than the accepted normal. However, the urinary content forms, as is usually the case, a small fraction of the total output, most of the calcium leaving the body via the fecal excrement. The effect of administering calcium chlorid in two cases of gout, kept on a fixed diet, was to cause a slight retention of nitrogen, but the phosphorus metabolism was practically unaffected. The effect on total calcium metabolism was not constant. In one case a small negative calcium balance was transformed into a small positive one; in the other the positive calcium balance was reduced. In both cases the urinary calcium was not affected. In the four cases observed by Bain the giving of calcium chlorid produced a marked fall in the uric acid output in the urine. This observation suggests that the administration of food rich in calcium should be restricted in cases of gout.

Medical Journal of Australia, Sydney

March 17, I, No. 11

45 Rise of Casualty Clearing Station. A. L. McLean.—p. 221.
46 Milk Curdling Properties of Pancreatic Juice. H. G. Chapman and A. H. Moseley.—p. 223. To be continued.
47 Intestinal Drainage in Septic Peritonitis. A. J. Nyulasy.—p. 226.

Archives Médicales Belges, Paris

February, LXX, No. 2, pp. 97-192

48 *Parenteral Injections of Peptone in Treatment of Infectious Diseases. (Des injections de peptone dans le traitement de la fièvre typhoide et des autres états infectieux.) P. Nolf.—p. 97.
49 *Spirochete Jaundice. (47 cas de spirochétose ictéro-hémorrhagique.) L. Wilmaers and E. Renaux.—p. 115.
50 Roentgen Localization of Foreign Bodies. (La localisation des corps étrangers.) Henrard.—p. 135.
51 Present Status of Primary Suture of War Wounds. (La suture primitive des plaies de guerre.) R. Focquet.—p. 148.

48. **Parenteral Injection of Peptone in Treatment of Infectious Diseases.**—Nolf has been continuing during the war his study of parenteral injection of albumoses and peptones as a means of modifying the colloidal balance of the blood plasma, and thus transforming the clinical picture. Several years ago he called attention to the efficacy of this in treatment of a tendency to hemorrhages, whether from congenital hemophilia or insufficiency of the liver, severe infection or purpura. He also established that this same measure might check the tendency to paroxysmal hemoglobinuria. His war experience has further demonstrated the efficacy of parenteral injections of peptone in the treatment of typhoid, warding off intestinal hemorrhage from reduced coagulating power of the blood. In severe cases of typhoid, pinching, rubbing or pricking the skin may start small subcutaneous hemorrhages. These are the patients liable to develop intestinal hemorrhage. He uses 10 c.c. of a 5 per cent. solution of peptone, and makes the injection in the gluteal muscle, repeating it every day if there is much tendency to hemorrhage or every second day as a preventive. The advantages of peptone are that it is readily obtainable, can be sterilized at 120 C., and that the intensity of the reaction can be graduated by the dose.

Nolf also describes experiences with it in intravenous injection. When injected slowly, not more than 5 c.c. of a 10 per cent. solution per minute, there are few and briefly transient signs of a reaction, but they are intensified if the injection is made rapidly. The pulse is the guide here. An assistant counts the pulse aloud, and the inflow is retarded or arrested if the figure goes up above the preceding pulse rate. When there is fever, the temperature runs up by 2 or 4 degrees C. but soon drops, and the patient sweats, feels relieved and more inclined to sleep and there may be transient polyuria. Tympany also is favorably modified. He emphasizes that there is nothing specific about the peptone. Its effect is probably of the same nature as that from the colloidal metals, autoserotherapy or injection of any antigen. Distilled water might answer the same purpose. All these act probably by disturbing the balance of colloids in the blood plasma, and thus inducing a more or less violent reaction in the apparatus which regulate this balance. Hence the parenteral peptone injections might have a favorable influence on infections of all kinds, and his experience has confirmed this assumption in a few cases of scarlet fever, erysipelas, acute articular rheumatism and streptococcus septicemia.

49. **Icterohemorrhagic Spirochetosis.**—Wilmaers and Renaux say that there are certain clinical points of difference between this spirochete hemorrhagic jaundice and Weil's disease, and that no one to date has been able to cultivate a spirochete from Weil's disease at all like that of the Inada-Ido spirochetosis. The latter was first noticed in Belgium in August, 1916, at the Bourbourg hospital to which all the jaundice cases are referred. Before this all the cases had been simple catarrhal jaundice, but in August they began to come in very severe, and by January, there had been forty-seven of this spirochetosis type, confirmed bacteriologically in thirty-one, out of a total of 253 cases of jaundice. The onset is sudden and stormy, but only about 50 per cent. of the patients displayed the hemorrhagic tendency. In two of the fatal cases there was rebellious epistaxis. The early and practically constant presence of urobilin in the urine testifies to the damage to the liver, while albuminuria and kidney cells in the urine and the scanty amount indicate serious impairment of the kidneys. In fact, they remark, a better name for the disease would be hepatonephritic jaundice. Prostration and headache are pronounced and convalescence is long, with much anemia, even in the milder cases. The jaundice develops by the second to fourth day and has a peculiar cachectic tint. The fever curve is characteristic: 39 or 40 C. by the first or second day, keeping there for two or three days, with slight morning remissions, dropping by lysis, and becoming normal by the seventh to ninth day. After a few days of apyrexia the fever may return and show the same curve but less intense and less regular. On account of the evident injury of the liver and kidneys, they never ventured to use salvarsan or its substitutes, and quinin never seemed to benefit. Sodium salicylate and sodium sulphate, milk diet and epinephrin to combat the low blood pressure, were the main reliance for symptomatic treatment, with tonics later.

Bulletin de l'Académie de Médecine, Paris

March 6, LXXVII, No. 10, pp. 307-344

52 *The Antitoxic Action of the Thyroid in Uremia. Rémond and Minvielle.—p. 334.
53 Bullet Removed from Heart after Three Months; Recovery. (Plaie du cœur par balle restée fixée dans l'épaisseur du ventricule gauche. Absence presque complète de réaction cardiaque. Intervention opératoire trois mois après. Guérison.) H. Gaudier.—p. 339.

March 20, No. 12, pp. 375-408

54 A Family with Inherited Syphilis; Five of Eight Children Require Appendicectomy. Gaucher.—p. 387.
55 Solutions of Zinc Chlorid for Painless Injection. P. Carles.—p. 391.
56 *Immediate Exercise as Principle for Treatment of War Wounds of Joints. (Mobilisation active immédiate pour les plaies de guerre, du genou et du coude.) C. Willems.—p. 394.
57 Experimental Generalized Vaccinia. L. Camus.—p. 402.
58 Preparations of Strophanthus in Treatment of Cardiac Insufficiency. (L'ouabaine cristallisée d'Arnaud dans le traitement de l'insuffisance cardiaque.) Vaquez and Lutembacher.—p. 405.

52. **Antitoxic Function of the Thyroid.**—Rémond and Minvielle report here further experimental research to determine the part played by the thyroid in uremia. The findings demonstrate that the thyroid has unquestionably some influence on the clinical picture in case of uremia, either by neutralization of toxins, or it may stimulate the functioning of the suprarenals, or it may have an inhibiting action on some secretion antagonistic to that of the suprarenals. Four recently thyroidectomized animals showed marked suprarenal insufficiency, but they also presented inflammatory lesions in the kidneys. From these data they conclude that the thyroid has a toxin-destroying function, and that the loss of this function after removal of the thyroid allows these toxins to accumulate in the blood and damage both the kidneys and the suprarenals. The clinical picture of uremia was notably aggravated by removal of the thyroid with consequent loss of its antitoxic action.

56. **Exercise from the First for Wounds of Knee or Elbow.**—Willems has been preaching since 1909 the advantages of treating extravasation of blood in the knee by puncture, followed at once by the physiologic use of the knee. He now announces that his experience in industrial accidents and in these years of war has amply convinced him that systematic immobilization is contrary to physiology and should be definitely discarded. The joint will not become stiff and the muscles will not atrophy if the active joint movements are kept up. Exercising the joint in bed is not enough; it must have its physiologic play, as in walking. Exercising the joint is not painful, he says, even when there are lesions of the bones, on condition that the parts do not become displaced; in this case there is liable to be intense pain. There is no functional impotence at first unless the joint is distended with an effusion. Later it may develop from atrophy of the muscles. Far from irritating the wounded articulation, these movements promote absorption of effusions and infiltration, owing to the kind of internal massage which they induce. When the joint is widely opened every movement forces out pus, and the synovial membrane thus empties itself much more effectually than with the most perfect drainage. More than this, movements are the best of all means to ensure the reabsorption of the exudation around the joint, the invariable accompaniment

of every arthritis. He insists that every recent wound of a knee or elbow should be treated by excision of the path of the projectile (*excision du trajet*), removal of foreign bodies and sequesters, and the wound then be completely closed. Active movements should be commenced on the spot, and be pushed to the maximum of the excursions and repeated without let-up except in case of such severe injury of the bones that their displacement is to be feared. If suppuration ensues, the suture will have to be cut, the arthrotomy completed as required and the active movements resumed. With fracture this principle cannot be applied. A fracture with tendency to displacement has to be treated like any fracture.

The patients have to be forced to exercise at first, but when they find that it does not hurt them, they keep it up voluntarily. After two or three weeks the movements may be hampered by swelling of the epiphyses and retraction of the soft parts. During this temporary stage, it may be well to have supplementary passive exercises. If sudden inability to use the joint develops, there is probably extravasation of blood. This can be evacuated between two suture stitches, and all becomes smooth again. Exercise is even more important for the elbow than for the knee, as it is impossible to drain it effectually otherwise. Tubes cannot be used for the elbow. If the joint becomes infected the suture must be cut, arthrotomy prolonged if necessary and made bilateral, leaving everything open and continuing the movements.

Lyon Médical

March, CXXVI, No. 3, pp. 109-156

59 *Share of Proteins in Production of Diabetes and of Diabetic Coma. (Du rôle des matières protéiques dans le diabète.) R. Pauly and R. Boulud.—p. 118.

60 Later Roentgenography for the Wounded. (Radiographie tardive des projectiles chez les blessés de guerre.) Japiot.—p. 124.

59. **Share of Proteins in Production of Diabetes and of Coma.**—Pauly and Boulud are not convinced that the coma of diabetes is due exclusively to the presence of the acetone bodies and acidosis. In certain cases, at least, their rôle may be accessory and some other explanation must be sought for the coma. They report in detail a case which sustains this point of view. A young woman died in diabetic coma but during the three months she was under observation, although the sugar content of the urine was high, there was only 14 gm. of urea at first and then 9.5 gm. in twenty-four hours, although the food abounded in nitrogenous substances. The urine was only slightly acid, from 2 to 3.5 gm. and the ammonia content only 0.21 to 0.84; the normal figure is about 0.75. The azoturic coefficient ranged from 92 to 87 in the urine, and in the blood was at first 74 and later only 60. Although the diet was as free from carbohydrates as possible, yet the daily output of sugar kept at 180. They suggest that this sugar must have been formed from protein substances. This would explain the low proportions of them in the urine as such large amounts had been converted into sugar. The patient had shown barely traces of acetone in the urine and this only on two occasions, and the Gehrhardt reaction was never positive. The coma in this case seems to have been the work not of the acetone bodies but of the peptids resulting from defective metabolism of albuminoid substances.

Paris Médical

March 3, VII, No. 9, pp. 169-196

61 *Participation of Liver in Malarial Symptoms. (Les bilieuses paludéennes.) P. Carnot.—p. 169.

62 *Infectious Jaundice. (La spirochétose ictérigène.) M. Garnier and J. Reilly.—p. 176.

63 *Uremia in Infectious Jaundice. (L'azotémie dans les ictères infectieux bénins.) P. Merklen and C. Lioust.—p. 184.

64 Dropsy in Course of Infectious Jaundice. (Anasarque généralisée au décours d'un ictère infectieux.) R. Voisin.—p. 189.

65 Jaundice in Course of Neosalvarsan Treatment; Two Cases. B. Milian.—p. 191.

66 *The Rat as Reserve Focus of Infection for Infectious Jaundice. (Le rat réservoir de virus pour la spirochétose ictéro-hémorragique.) P. Cornet.—p. 193.

61. **Malarial Jaundice.**—This entire number of the *Paris Médical* is devoted to disease of the liver. Carnot discusses jaundice for which malaria is responsible, from the participation of the liver in ordinary forms of malaria to intermittent and remittent, hemorrhagic and hemoglobinuric bilious fever. The simultaneous attack by the malarial parasites on the blood, the vessels, the spleen, the liver and the kidneys readily explains the peculiar and grave character of malarial jaundice, and the hemorrhages in hemoglobinuria liable to accompany the jaundice.

62. **Spirochete Jaundice.**—Garnier and Reilly remark that the first case of spirochete infectious jaundice known in France was published last October, but numbers have been encountered since. The diagnosis is based on results of inoculation of guinea-pigs with blood or urine from the sick, the detection of the spirochete in the urine, and the passive immunity conferred on the guinea-pig by serum from convalescents. The spirochetes are easily seen in the urine when 10 c.c. are centrifuged and a droplet of the sediment is mixed with India ink. Or a droplet of a 2 per cent. solution of Congo red can be used to mix with a droplet of the centrifuged urine. When the smear is dry, a few drops of a 1 per cent. alcoholic solution of hydrochloric acid are dropped on it. This shows up the spirochetes white on a blue background. They have a wavy outline, the ends forming a hook. Convalescent serum usually, but not always, confers passive immunity. The usual type of this "icterogenous spirochetosis," as they call it, is that of more or less grave infectious jaundice with febrile relapses. In the grave form with jaundice and nervous phenomena, there is more or less anuria, but coagulation of the blood is only slightly retarded. Necropsy shows the liver comparatively intact. The kidneys seem to bear the brunt of the attack. In cases of severe jaundice with acute degeneration of the liver, some primal cause other than this spirochete seems to be responsible for the latter.

63. **Uremia in Infectious Jaundice.**—Merklen and Lioust state that the azotemia with benign infectious jaundice is of the type of acute hepatic azotemia. The danger is not from the large proportion of urea in the blood but from its long continuance. A transient, even high uremia does no harm, comparatively speaking, if the urea is promptly eliminated. If the kidneys are sound, the torchlight may flare up, but the uremia does not start a conflagration. By keeping watch of the uremia we can tell whether the jaundice is mild or tends to the grave type.

66. **Rats as Sources of Infection for Spirochete Jaundice.**—The finding of spirochetes in rats in the trenches and at Lyons has already been mentioned in these columns, abstract 61, p. 1219. The same data are republished here, and it is mentioned that the persons inclined to develop infectious jaundice are usually butchers, sewermen and others whose occupation or unusual circumstances, such as trench warfare, bring them in contact with rats. The statement is also made that during the course of the War of Secession, 70,000 men developed infectious jaundice, that is, 2.5 per cent. of the total forces engaged.

Presse Médicale, Paris

February 19, XXV, No. 11, pp. 97-112

67 *Pleurisy in the Interlobar Fissures in the Tuberculous. (Synthèse clinique des interlobites chez les tuberculeux.) C. Sabourin.—p. 97.

68 Presence of Spores of Anaerobic Bacteria in Military Uniforms in Belgium. J. P. Simonds.—p. 100.

69 Association of Bacillus Perfringens and Bacillus Edematis in Case of Gas Gangrene. G. V. Legros.—p. 101.

70 *Inguinal Herniotomy. Jayle.—p. 103.

February 22, No. 12, pp. 113-120

71 *Varieties and Evolution of Shell Shock. (Troubles nerveux et psychiques d'origine commotionnelle pendant la guerre.) H. Aimé.—p. 113.

72 Identification of Ameba Cysts. (Identification des kystes des entamibes intestinales de l'homme.) C. Mathis and L. Mercier.—p. 114.

March 1, No. 13, pp. 121-128

73 *Clinical Study and Prosthesis for Pseudarthrosis of the Humerus. Ducrocquet.—p. 121.

74 *Cirrhosis of the Liver plus Psychosis and Polyneuritis. V. Donnet.—p. 124.

67. **Pleurisy Affecting the Fissures.**—Sabourin here describes the complete clinical picture of what he calls the interlobitis of the tuberculous. It often lacks some of the symptoms we are accustomed to find with pleurisy, so that the diagnosis

is usually retrospective. When on the left side, it may leave adhesions liable to seriously hamper the heart action. He comments particularly on the form he calls "shirt-stud pleuritis," saying that in the majority of cases of interlobitis, the inflammation and the serous effusion in the fissure may have a beneficial influence on the primary tuberculous focus. It may act by revulsion or it may be that every crisis of activity by bacilli is able to enhance the immunity processes in the organism, and the pre-existing bacillary focus in the lung may profit by this.

70. **Simplified Technic for Inguinal Radical Herniotomy.**—Jayle does not use catgut but silk for reconstructing the wall, making a figure 8 suture with it, as he describes in detail. The operation is complete in from ten to twelve minutes or, with surgical assistance, in six minutes.

71. **Treatment of Shell Shock.**—Aimé explains that treatment must vary with the conditions in each case. When the traumatic psychoneurosis is manifested mainly by asthenia, he gives epinephrin and strychnin in large doses, even when the internal ear seems to be affected. Dieting, hydrotherapy and baths had a beneficial influence in the confusional cases, with complete abstention from sedative medication. In the mutism cases, after expectant study of the case, he overcomes the mutism by inhalation and injection of ether. These psychoneuroses affect mainly the internal ear or they may be of the medulla-sympathetic type or a psycho-confusional type. The shell shock seems to release toxic elements from a previously damaged organ, the liver, kidneys or intestines and these toxic elements may act on the brain. It is difficult in such cases to decide which of the symptoms are due to the concussion and which to the damaged organ. The asthenia so often noted with shell shock is evidently due to the sudden suppression of suprarenal functioning from the inhibiting influence of the sympathetic nervous system, as manifested otherwise in mydriasis, etc., in the *choqués*. He remarks that the *torpilles* or *minenwerfer* are dreaded most by the soldiers as they approach noiselessly while the shock of the explosion is felt on a radius of at least 50 meters.

73. **Pseudarthrosis of the Humerus.**—Ducroquet's profusely illustrated article describes the pseudarthrosis above and below the deltoid, and protheses for both. By the use of the devices described, the arm gradually regains as much of its functions as is possible.

74. **Cirrhosis and Psychopolyneuritis.**—Donnet reports in detail a case of the syndrome characterized by cirrhosis of the liver of alcoholic origin, a psychosis and polyneuritis, comparing it with similar cases on record. The patients usually succumb before long to intercurrent pneumonia, meningitis, cachexia or coma, but a few instances of recovery are known in men. The outlook seems to be less favorable for women. In his case the affection developed in two phases: first the chronic alcoholism and the gradually developing motor and sensory nervous symptoms. This phase lasted several years. The stomach and liver seemed to be functioning satisfactorily except for the small appetite and the hypertension in the portal system. The second phase proved fatal in two months, mental confusion and hallucinations developing, parallel with liver symptoms, insufficiency of the liver, jaundice and tachycardia, the pulse over 100 while the temperature kept normal.

Progrès Médical, Paris

March 17, XXXII, No. 11, pp. 85-92

75 *Why Suppurating Otitis Media Becomes Chronic. H. Bourgeois.—p. 85.

76 Primary Resection of the Elbow. (Resection primitive du coude en chirurgie de guerre.) A. Aimes.—p. 87.

March 24, No. 12, pp. 93-100

77 *Iodoform Spray Treatment of War Wounds. (La methode Mencière en chirurgie de guerre.) Braquehaye.—p. 93.

78 Case of Tardy Hemorrhage in Internal Ear after Shell Shock. H. Bourgeois.—p. 94.

79 *Thyroid Treatment of Neuroses. (Névroses et opothérapie.) J. Blanc.—p. 95.

75. **Why Acute Otitis Media Becomes Chronic.**—Bourgeois remarks that now, in more cases than ever before, acute otitis media is passing into a tenacious chronic phase, and he ascribes this in many instances to the lack of prompt and efficient treatment under war conditions. It is beyond our power to modify a bad general condition in time to affect otitis media, or to attenuate the virulence of peculiarly vicious germs, or prevent destructive lesions and immediate infection after wounds of the ear. But much can be done by early paracentesis, supervision of the efficiency of our drainage, aseptic dressings, and trephining in time. With these measures it is possible to control nearly all cases of otitis media, and an aseptic dressing will ward off further damage, so that the trauma of the tympanum may heal. Any general debility, adenoids, focus of osteitis, and secondary infection are potent factors in the chronicity. He expatiates further on the advantages of surgical incision rather than allowing the lesion to progress to spontaneous perforation of the membrane.

77. **Iodoform Mixture Spray in Treatment of War Wounds.**—Braquehaye states that in all his experience with the wounded he has never seen wounds heal so fast or so perfectly as under the Mencière treatment. (It was described in these columns, April 28, 1917, p. 1294.) It allows longer intervals between changing the dressings and thus enables more wounded to be treated in a given time. No special skill is required for its application, and so little of the fluid is used that the method is inexpensive, while, last but not least, the odor of the balsam is agreeable and refreshing. Others advocate this method also as being absolutely indispensable on the firing line during offensive fighting.

79. **Thyroid-Parathyroid Treatment of War Neuroses.**—Blanc comments on the remarkable frequency of abnormal thyroid functioning in the men on active service. He recalls that the thyroid is peculiarly susceptible to emotional stress, overfatigue and defective hygiene, which readily explains why so many of the troops present evidences of abnormal thyroid and parathyroid functioning. He has found the oculocardiac reflex a good index of conditions. With these functional disturbances of the nervous system this reflex is usually exaggerated, indicating vagotony. Under thyroid or parathyroid treatment or both, this reflex disappears or becomes inverted as recovery progresses.

Correspondenz-Blatt für Schweizer Aerzte, Basel

March 24, XLVII, No. 12, pp. 353-384

80 *Research on the Physiology of the Anterior and Posterior Central Convolution and the Parietal Convolutions. (Zur Physiologie der vorderen und hinteren Zentralwindung und der Parietalwindungen.) M. Minkowski.—p. 353.

80. **Physiology of the Anterior and Posterior Central Convolution of the Brain.**—Minkowski is assistant at the Institute for Anatomy of the Brain at Zurich of which von Monakow is director. He here describes with four illustrations research on monkeys the results of which, among other things, confirm von Monakow's statements (1914) in regard to the localization and organization of movements and sensibility in the cortex. Minkowski emphasizes the essential difference between the effects of removal of the anterior and of the posterior central convolution. The initial symptom after resection of the anterior central convolution was a crossed hemiplegia which gradually became transformed into a permanent hemiparesis. There was no paresis nor contracture after resection of the posterior central convolution, but merely crossed disturbances in sensation, and some persisted permanently. It is evident from these and other findings reported that the anterior central convolution is the area for the isolated finer kinds of movements as well as for locomotion. The adaptation of movements to the individual conditions is represented best in the anterior central convolution. The area mapped out by Munk for the movements of the extremities does not extend far enough.

Gazzetta degli Ospedali e delle Cliniche, Milan

February 18, XXXVIII, No. 14, pp. 209-224

81 *Acute Cerebrospinal Meningitis. E. Belliboni.—p. 211.

82 *Iron Goggles for the Firing Line. (La protezione degli occhi nella linea di fuoco, come si pratica nell-esercito nemico.) T. Di Giuseppe.—p. 213.

February 22, No. 15, pp. 225-240

83 Fracture of the Astragalus with Detachment of Outer Edge; Two Cases. (Frattura di Shepherd.) E. Greggio.—p. 228.

84 Abdominal Wounds in War. G. Campora.—p. 230.

February 25, No. 16, pp. 241-256

85 Neuroses in Soldiers on Active Service. (Simulazione e nevrosi nella pratica castrense.) A. Salmon.—p. 241.

81. **Epidemic Meningitis.**—Belliboni remarks that enlargement of the spleen is an aid in differentiating epidemic from tuberculous meningitis, also the lack of harmony between the temperature, pulse and respiration. The stiffness of the vertebrae, the premastoid and Kernig signs, ocular phenomena and disturbances in sensibility depend on the region of the nervous system first involved. A catarrhal condition in the nasopharynx also aids in differentiation. He describes six cases, with the death of one of the three children, and extols the efficacy of intramuscular injections of antimeningococcus serum. It should be supplemented by disinfection of the nasopharynx.

82. **Goggles for the Firing Line.**—The iron goggles illustrated have slits, transverse and slanting, which permit ample vision. A circular piece of woolen goods is fastened around the part that serves as the lens. This absorbs sweat dripping from the forehead. The goggles protect against the sun and against small flying particles of shells, while the slits have the effect of rendering vision more acute.

Policlinico, Rome

March 11, XXIV, No. 11, pp. 337-368

86 *Bacteriologic Findings in Insane Pellagrins. (Ricerche batteriologiche sulle psicosi pellagrose.) G. Tizzoni.—p. 337.

87 Portable Device for Extension of Fractured Humerus. (Nuovo apparecchio ad estensione per fratture dell'omero.) G. Pierucci. —p. 339.

88 Organization of Field Hospitals. (Ancora a proposito dei servizi sanitari campali.) G. Mendes.—p. 341.

March 18, No. 12, pp. 369-404

89 *Pale Spirochetes Coiled Around Central Cylinder. (Nuovi reperti nel ciclo di sviluppo della spirochaeta pallida, e loro rapporto colla patogenesi della metalues.) E. Ciarla.—p. 369.

90 *Asepsis in Treatment of Infected Wounds in War. (Sul trattamento delle ferite settiche.) G. B. Stretti.—p. 372.

91 Palpitation of the Heart in Soldiers. (Il cardiopalmo nei soldati.) G. Galli.—p. 378.

92 Treatment of Stiffness of the Joints after War Wounds. (Delle anchilosi e rigidita articolari nei postumi traumatici di guerra.) T. C. Ippoliti.—p. 381.

86. **Bacteriologic Findings in Insane Pellagrins.**—Tizzoni declares that the germ he has described as the specific agent of pellagra was found present in the blood of all the numerous insane pellagrins examined at the Mombello Asylum. The findings were positive in all without exception, as also in a case of pellagrous skin lesions. In this case the germ was cultivated from the cerebrospinal fluid and spleen and from the scales from the skin lesions. He states that the germ passes through three phases in its cycle of evolution, first a bacillus, then a streptococcus and finally a staphylococcus, changing from one phase to the other in irregular fashion. The positive findings in the blood may continue through years, even in the mild forms of pellagra or intermissions, when the patients seem to be quite free from manifestations of the disease. The passage from one phase to another corresponds with some change in the manifestations of the disease. The streptococcus phase seems to be the most toxic, the staphylococcus phase next. The lack of any appreciable toxic action on the nervous system from the bacillary type of the germ is confirmed by its lack of coagulating and fermentative properties. Tizzoni is professor of general pathology at the University of Bologna and member of the Italian Academy of Sciences. He does not give any further details of the pellagra germ in this communication. He has been studying it since early in 1915.

89. **The Cycle of Development of the Spirochaeta Pallida.**—Ciarla has been studying for three years various phases of the development of the pale spirochete, and here relates that he has discovered a means to show phases of its development other than those hitherto described. In this preliminary communication he does not give the details of his technic, but presents a number of illustrations of these various phases. Some of them represent large spirochetes found in the organs of syphilitic fetuses. The spirals of the spirochete are extremely regular and form a comparatively stiff, straight coil as the spirals are wound around a central cylinder, a kind of membrane, forming a hollow tube. This central cylinder has also terminal coils or balls, suggesting terminal germinal buds. Some of the spirochetes terminate in a kind of rosette, like petals. This latter type was found only in the spinal ganglia of a tabetic. He thinks it possible that these rosettes are a spore phase of development of the spirochetes, which occurs only in tabes and progressive paralysis, explaining their peculiarly tenacious character.

90. **Asepsis in Treatment of Infected Wounds.**—THE JOURNAL described, Oct. 7, 1916, Ruggi's principles for treatment of war wounds, clearing out, ample drainage and then leaving the rest to Nature. Constant surveillance is indispensable, ready at any moment to reenforce the natural processes if they show signs of being unable to cope with the infection, as evidenced by pain, hemorrhage and rising temperature. His plea is that even the slightest displacement of any of the tissues in the wound permits germs to proliferate in the intervening spaces. The part must be strictly immobilized and the dressings changed only when absolutely necessary. The arguments for this method of treatment are presented anew by Stretti, assistant at the university surgical clinic at Bologna, of which Ruggi is chief. He calls attention to the excellent results obtained there with the Ruggi technic and replies to some theoretical objections made recently by Silvestrini. The wounded do not reach Bologna until several days after their first dressing, and the wound once cleared out, drained, dressed, and the limb immobilized, it is left unmolested sometimes up to eighteen days or even more. No statistics or further details of the technic are given.

Riforma Medica, Naples

February 17, XXXIII, No. 7, pp. 169-196

93 *Epilepsy from Nicotine Poisoning. (Sulla epilessia tabacica.) E. Tedeschi.—p. 169.

94 Gas Gangrene. C. Oliva.—p. 172. To be continued.

95 Treatment of War Wounds of the Lungs. E. Morelli.—p. 180. Commenced in No. 6, p. 146.

96 Epidemic Spirochete Jaundice. U. Gabbi.—p. 183. Commenced in No. 6, p. 155.

February 24, No. 8, pp. 197-224

97 Vaccine Therapy of Malta or Undulant Fever. (Contributo alla vaccinoterapia della febbre mediterranea.) C. Vallardi.—p. 197.

98 *Paralysis of the Diaphragm. (L'emiplegia diaframmatica nella patologia del mediastino.) A. Ferrannini.—p. 208.

99 Present Status of Ascending Traumatic Neuritis. L. Ferrannini. —p. 211.

93. **Tobacco Epilepsy.**—Tedeschi's first patient was a man of 32 presumably healthy until three years ago when he had a seizure resembling an epileptic seizure, and, after a few days' interval, a few more. He was in the habit of smoking sixty or seventy cigarettes a day but did not drink and had no history of venereal disease. On suspension of smoking he had no further attacks for two or three years. Believing himself cured, he began to smoke again, when suddenly, on the street, he had a severe and complete epileptic seizure, with loss of consciousness and biting the tongue. One of his mother's sisters was an epileptic. In a second case the man of 29 did not smoke, but chewed tobacco almost constantly. He developed typical epileptic seizures but had no more after giving up the use of tobacco. Tedeschi's investigation of the female workers in a large tobacco factory resulted in the discovery of three that had had epileptic seizures during work hours. Any such tendency outside of work hours would be concealed for fear of being dismissed. The three known cases were in women of 20, 36 and 35. The last mentioned had been a cigarmaker for seventeen years. She seemed otherwise healthy except for occasionally irregular and scanty menstruation, and had no seizures when she quit work for a year, but they returned then in a very severe form on resuming her work. There was no family history of epilepsy in this case. Tedeschi remarks that in all the known similar cases on record the age was between 20 and 36. Experimental research has confirmed that tobacco may induce a tendency to convulsions in animals. A number of research workers have recently reported cellular changes in the cortex of rabbits and guinea-pigs long submitted to slow tobacco intoxication. Peri reported in 1906 that workers on tobacco die

mostly from lesions in the circulatory system, especially from changes in the cerebral arteries. All these data sustain the assumption that tobacco is able to induce actual epilepsy in certain rare cases, even in the absence of a special predisposition.

98. **Paralysis of the Diaphragm.**—Ayerza called attention to the clinical picture resulting from paralysis of one half of the diaphragm. The paralysis of the phrenic nerve may be of diphtheric origin, or there may be atrophy of the diaphragm muscle from lesions in the central nervous system, from tuberculous mediastinal glands, sarcoma or aneurysm of the aorta. Roentgen examination will differentiate this diaphragm hemiplegia from echinococcus disease of the liver, as Ferrannini explains with a roentgenogram. The paralyzed diaphragm slants smoothly upward toward the outside, while with echinococcus disease in the liver the diaphragm is liable to bulge in the center. The paralysis may show phases of improvement and aggravation, as the unilateral lesion of the phrenic nerve varies in intensity.

Siglo Medico, Madrid

March 10, LXIV, No. 3300, pp. 145-164

100 *Substances in Urine, besides Glucose, that Give a Positive Response to Fehling's Test. (Sacarurias.) A. Pi Suñer.—p. 146.

101 Portable Apparatus for Electrotherapeutics. Petit (Barcelona). —p. 150.

March 17, No. 3301, pp. 165-184

102 *Preventive Treatment of Rabies. (6,000 casos de tratamiento profilactico de la rabia.) F. Murillo.—p. 166.

100. **Sugars Other than Glucose in the Urine.**—Pi Suñer is professor of physiology at Barcelona, and he discusses here the different *sacarurias*, as he calls them. He classifies them in three groups, those accompanying diabetes, the alimentary types, and the essential. Almost all types of sugars and pseudosugars can be encountered with diabetes, but they do not seem to modify the symptoms or treatment. The sugars found in essential sacarurias are maltose, lactose, pentose and pseudolevulose or isoglucuronic acid. The latter seems to be most abundant on a meat diet, and hence reduction of meat is called for. When this pseudolevulosuria accompanies diabetes, it may be wise to alternate periods of dieting directed first to one form of sugar and then the other.

102. **Rabies in Spain.**—Murillo reviews the 6,000 cases in which preventive treatment for rabies was given at the Instituto Nacional de Higiene at Madrid since 1901. Of the total 6,000, 3,162 were men and 1,140 children; 32 were physicians and 45 veterinarians—cases of laboratory or necropsy inoculations. There were 24 deaths among the 6,000 cases, but 10 occurred before the treatment had had a chance to prove its efficacy, leaving 14 in which the treatment proved a failure either because too long an interval had elapsed or because for some reason the organism was unable to generate sufficient antibodies. The mortality was thus 0.23 per cent. Of the total 6,000 patients 2,000 had been bitten at Madrid, showing that the ordinances against dogs are not enforced. The lesions in the total 6,000 were from cats in 422 cases, mules and asses 83, cows 131, horses 4 and dogs 5,412. Other animals mentioned are rats, deer, goats, monkeys, rabbits, wolves, foxes and ferrets. The different months averaged about the same, with a slight preponderance of April, May, June and July.

Russkiy Vrach, Petrograd

1916, XV, No. 51, pp. 1201-1224

103 The Scientific Work of N. O. Ziber-Sumova. M. D. Ilin.—p. 1201.

104 Exogenous Uric Acid in Urine as Differentiating Sign of Gout. (Ekzogennaya mochevaya kislota kak rasposnav. priznak podagri. Liechenie podagri atophanom.) G. Y. Yavein.—p. 1203.

105 War Wounds of Vessels. N. A. Dobrovolskaya.—p. 1210. Continuation.

106 *Scurvy at Petrograd. 500 Cases. (Nabliudeniya nad tsingoiu v Petrograd v 1916 godu.) A. A. Nechaeff.—p. 1216.

No. 52, pp. 1225-1232

107 Wounds of Vessels and Traumatic Aneurysms. (K ucheniyu o ranenii sosudov i o traum. aneurizmakh.) N. A. Dobrovolskaya. —p. 1225. Conclusion.

106. **Scurvy at Petrograd.**—Nechaeff's figures show that each year since 1894 till 1915 there have been from 13 to 275 cases of scurvy admitted to the Obukhovskoi Hospital. The smallest number was in 1914 and the largest in 1900. In 1916 an actual epidemic developed, 500 cases being treated there, nearly all in the months of May and June. This predominance of May and June, with the month before, was noticed also through all the preceding years. About 7 per cent. of the 500 scurvy cases terminated fatally. Nechaeff states that the quality of the food supply in Petrograd during 1916 was below the usual standard, and extensive use was made of frozen meat. He discusses from the etiologic point of view various features of the epidemic, his conclusions being that the epidemic of scurvy at Petrograd is traceable to the extensive use of frozen meat or of defective or spoiled potatoes or both. The patients had not been getting the proper proportions of vitamins. The freezing may have destroyed those in the meat. He rejects the theory that scurvy is due to chronic poisoning from the products of decomposition. It is more probably a vitamin deficiency disease.

Hospitalstidende, Copenhagen

February 28, LX, No. 9, pp. 197-220

108 Experimental Basis for Optochin Treatment. O. Thomsen.—p. 197.

109 *Present Status of Oculocardiac Reflex. (Øje-Hjærtereflexen: Réflexe oculo-cardiaque; Dagnini's Reflex.) V. C. E. Petersen. —p. 206.

March 7, No. 10, pp. 221-248

110 Optochin in Treatment of Pneumonia. (Optochinbehandling.) F. Vermehren.—p. 221.

109. **Present Status of Oculocardiac Reflex.**—Petersen summarizes the literature on this subject since Dagnini in 1908 called attention to the change in the pulse on compression of the eyeballs. He cites reports of the exaggeration of the reflex in epileptics, the increase greater the more frequent the seizures. Bromids attenuate it. The reflex seems to be lost very early in tabes, and this might aid in early differentiation. Gautrel found an inverse reaction in certain tabetics. In short, Petersen concludes, this reflex deserves great attention both from the medical and the neurologic point of view, especially as it is so simple and easy to elicit. He gives the pulse chart of a man of 22, a teacher, who complained of occasional attacks of arrhythmia, but the objective findings were all apparently normal. On compression of the eyeballs, bradycardia developed, and when the pressure was released there were presystoles. The patient said that the sensations during his attacks were like this presystole stage. In repose the pulse showed merely slight respiratory arrhythmia. The presystoles of nervous origin—in contrast to those resulting from myocardium disease—occur or are increased during the first phase of compression of the eyes, but stop when the pressure is removed. They can thus serve to differentiate between nervous and cardiac presystoles. Lian has proposed to utilize this pressure on the eyeballs reflex as a means to arrest paroxysmal tachycardia. Pressure on the eyeballs seems to be the most potent means at our command to influence the vagus and thus indirectly control heart action. It has proved more effectual for this in Petersen's hands than compression of the nerves in the neck.

Ugeskrift for Læger, Copenhagen

February 8, LXXIX, No. 6, pp. 225-250

111 Peptic Ulcers. (Et Par sjældne Ulcerationer i Fordøjelseskanalen.) E. Meulengracht.—p. 225.

112 Present Status of Urochromogen Reaction. C. Schwensen.—p. 231.

113 Technic for Reduction of Dislocation of Humerus. (Bidrag til Repositionstekniken ved Luxatio humeri subcoracoidea.) G. V. T. Borries.—p. 235.

114 Technic for Extraction of Teeth by Nonspecialist. (Et lille Bidrag til Tandextraktionens Teknik.) G. V. T. Borries.—p. 239.

February 15, No. 7, pp. 251-278

115 Otogenous Pyemia without Sinus Phlebitis. J. R. Kragh.—p. 251.

116 *Combined Radiotherapy. (En lysbiologisk Iagttagelse.) E. Collin. —p. 261.

116. **Combined Radiotherapy.**—Collin relates that a combination of the arc light and mercury vapor light exposures induced a more powerful reaction than either alone. He noticed further that the erythem developed earlier and more intense the higher the temperature of the skin.

THE NEW YORK SESSION

AMERICAN MEDICAL ASSOCIATION, SIXTY-EIGHTH ANNUAL SESSION, NEW YORK CITY, JUNE 4-8, 1917

OFFICIAL CALL

TO THE OFFICERS, FELLOWS AND MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION

The sixty-eighth annual session of the American Medical Association will be held at New York City, June 4-8, 1917.

The House of Delegates will convene at 10 a. m., Monday, June 4. In the House the representation of the various constituents associations for 1917 is as follows:

Alabama	3	New Hampshire	1
Arizona	1	New Jersey	3
Arkansas	2	New Mexico	1
California	4	New York	11
Colorado	2	North Carolina	2
Connecticut	2	North Dakota	1
Delaware	1	Ohio	5
District of Columbia	1	Oklahoma	2
Florida	1	Oregon	1
Georgia	3	Pennsylvania	9
Idaho	1	Rhode Island	1
Illinois	9	South Carolina	1
Indiana	4	South Dakota	1
Iowa	3	Tennessee	2
Kansas	2	Texas	5
Kentucky	4	Utah	1
Louisiana	1	Vermont	1
Maine	1	Virginia	3
Maryland	2	Washington	2
Massachusetts	5	West Virginia	2
Michigan	4	Wisconsin	3
Minnesota	2	Wyoming	1
Mississippi	2	Canal Zone	1
Missouri	5	Hawaii	1
Montana	1	Philippine Islands	1
Nebraska	2	Porto Rico	1
Nevada	1		

The fifteen scientific sections of the American Medical Association, the Medical Department of the Army, the Medical Corps of the Navy and the Public Health Service are entitled to one delegate each.

The general meeting, which constitutes the opening exercises of the Scientific Assembly of the Association, will be held at 8:15 p. m., Tuesday, June 5. The various sections of the Scientific Assembly will meet Wednesday, June 6, at 9 a. m., and subsequently, according to their respective programs.

The Registration Department will be open from 8:30 a. m. until 5:30 p. m., on Monday, Tuesday, Wednesday and Thursday, June 4, 5, 6 and 7, and from 8:30 a. m. to 12 noon, on Friday, June 8.

RUPERT BLUE, President.

HUBERT WORK, Chairman, House of Delegates.
ALEXANDER R. CRAIG, Secretary.

MEMBERS OF THE HOUSE OF DELEGATES

A Preliminary Roster of the Legislative Body of the American Medical Association

The list of members of the House of Delegates for the session is incomplete, as a number of the state societies are yet to hold their meetings at which delegates will be elected. The following is a list of the holdover delegates and of the newly elected members who have reported to THE JOURNAL in time to be included:

STATE DELEGATES

ALABAMA
L. L. Hill, Montgomery.
E. F. Moody, Dothan.

ARIZONA
J. I. Butler, Tucson.

ARKANSAS
C. P. Meriwether, Little Rock.

CALIFORNIA
H. Bert Ellis, Los Angeles.
O. D. Hamlin, Oakland.

COLORADO
L. H. McKinnie, Colorado Springs.
Oliver Lyons, Denver.

CONNECTICUT
D. Chester Brown, Danbury.

DELAWARE
Willard Springer, Wilmington.

DISTRICT OF COLUMBIA
G. Wythe Cook, Washington, D. C.

GEORGIA
S. R. Roberts, Atlanta.
F. W. McRae, Atlanta.

IDAHO
C. R. Scott, Twin Falls.

ILLINOIS
T. O. Freeman, Mattoon.
C. W. Lillie, East St. Louis.
Robert S. Denny, Aurora.
A. M. Harvey, Chicago.
Hugh McKechnie, Chicago.
J. C. Krafft, Chicago.

INDIANA
J. Rilus Eastman, Indianapolis.
A. E. Bulson, Jr., Fort Wayne.
C. H. Good, Huntington.
Miles F. Porter, Fort Wayne.

IOWA
L. W. Littig, Davenport.
M. Nelson Voldeng, Woodward.

KANSAS
O. D. Walker, Salina.

KENTUCKY
C. L. Wheeler, Lexington.
W. W. Richmond, Clinton.

MARYLAND
Randolph Winslow, Baltimore.

MASSACHUSETTS
J. B. Blake, Boston.
H. G. Stetson, Greenfield.
L. F. Woodward, Worcester.

MICHIGAN
F. C. Warnshuis, Grand Rapids.
A. I. Lawbaugh, Calumet.

MINNESOTA
W. L. Beebe, St. Cloud.
H. P. Ritchie, St. Paul.

MISSISSIPPI
I. W. Cooper, Newton.

MISSOURI
Wilson J. Ferguson, Sedalia.
W. J. Frick, Kansas City.
H. L. Reid, Charleston.

MONTANA
J. H. Irwin, Great Falls.

NEBRASKA
I. H. Dillon, Auburn.

NEW HAMPSHIRE
C. W. Hannaford, Portsmouth.

NEW JERSEY
Edward Guion, Atlantic City.

NEW MEXICO
S. D. Swope, Deming.

NEW YORK
Wendell C. Phillips, New York.
W. J. Cruikshank, Brooklyn.
J. W. Fleming, Brooklyn.
F. E. Sondern, New York.
Dwight H. Murray, Syracuse.

OHIO
B. R. McClellan, Xenia.
C. D. Selby, Toledo.

OKLAHOMA
John W. Riley, Oklahoma City.

OREGON
Walter T. Williamson, Portland.

PENNSYLVANIA
A. R. Allen, Carlisle.
William F. Bacon, York.
Wilmer Krusen, Philadelphia.
Charles G. Strickland, Erie.
Frederick L. Van Sickle, Olyphant.
David N. Dennis, Erie.
Edward B. Heckel, Pittsburgh.
John D. McLean, Philadelphia.
C. L. Stevens, Athens.

PHILIPPINE ISLANDS
S. C. Gurney, Manila.

PORTO RICO
Jose S. Belaval, San Juan.

RHODE ISLAND
J. E. Mowry, Providence.

SOUTH CAROLINA
E. A. Hines, Seneca.

TENNESSEE
Perry Bromberg, Nashville.
A. F. Richards, Sparta.

TEXAS
M. L. Graves, Galveston.

UTAH
Sol G. Kahn, Salt Lake City.

VERMONT
Alan Davidson, St. Albans.

VIRGINIA
W. E. Anderson, Farmville.
Southgate Leigh, Norfolk.

WASHINGTON
Don Palmer, Seattle.
D. E. McGillivray, Pt. Angeles.

WEST VIRGINIA
Frank LeMoyne Hupp, Wheeling.
C. R. Ogden, Clarksburg.

WISCONSIN
T. H. Hay, Stevens Point.
Rock Sleyster, Waupun.
H. M. Brown, Milwaukee.

DELEGATES FROM THE SECTIONS

PRACTICE OF MEDICINE
Samuel J. Meltzer, New York.

SURGERY, GENERAL AND ABDOMINAL
Dean D. Lewis, Chicago.

OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY
Horace G. Wetherill, Denver.

OPHTHALMOLOGY
F. P. Calhoun, Atlanta, Ga.

LARYNGOLOGY, OTOLOGY AND RHINOLOGY
Robert Levy, Denver.

DISEASES OF CHILDREN
H. M. McClanahan, Omaha.

PHARMACOLOGY AND THERAPEUTICS
R. A. Hatcher, New York.

PATHOLOGY AND PHYSIOLOGY
H. Gideon Wells, Chicago.

STOMATOLOGY
W. C. Fisher, New York.

NERVOUS AND MENTAL DISEASES
George A. Moleen, Denver.

DERMATOLOGY
Richard L. Sutton, Kansas City, Mo.

PREVENTIVE MEDICINE AND PUBLIC HEALTH
William C. Rucker, Washington, D. C.

GENITO-URINARY DISEASES
Edward L. Keyes, Jr., New York.

ORTHOPEDIC SURGERY
John Ridlon, Chicago.

MEDICAL NEW YORK CITY

The Medical Features of the Convention City*

To understand medical conditions in New York requires a certain knowledge of its geography and peculiarities of city government. The statement that New York has a population of 5,737,000 carries to the average mind the idea of a vast city. How vast it is can be comprehended only by comparison. It is composed of five great cities known as boroughs. In population, the Borough of Manhattan is larger than Chicago; Brooklyn is larger than Philadelphia; the Bronx is as large as Detroit; Queens is larger than Minneapolis; Richmond is larger than Salt Lake City.

These five boroughs are also five counties of the state of New York. Each county has its own county government and elects such county officers as district attorney, sheriff and county clerk. The great government interests of the city are carried on by numerous departments, each with its commissioner, appointed by the mayor. The departments of health and public charities come most nearly in touch with the medical profession. Most of these departments, like the health department, have their headquarters in the city hall region of Manhattan. They have, however, subheadquarters in each borough, with an official who has special duties in that borough. The reports of the health department cover the whole city and must be read with the knowledge that they are based on the population of the five boroughs.

The Hotel Astor.

MEDICAL SOCIETIES

Each of the five counties composing New York has its county medical society, independent of each other but affiliated with the state medical society. The state and county medical societies are all organized and chartered pursuant to the law of 1806. This was the greatest medical law of New York State and looms up like a landmark in its medical history. The state medical society was organized at once on the passage of the law, and numbers 8,454 members.

The Medical Society of the County of New York was organized in 1806, with 371 members. The membership is now 2,766. It was virtually a reorganization of a society which had been formed in 1795.

The Medical Society of the County of Kings was organized in 1822, and has a membership of 884. It maintains a handsome building in Brooklyn and performs the work assumed in many cities by the academy of medicine. In addition to its county society functions it maintains a medical library of over 70,000 volumes.

The Medical Society of the County of Queens-Nassau was organized in 1806. Its membership is 160.

The Medical Society of the County of Richmond was organized in 1806. Its membership is fifty-six.

The Medical Society of the County of the Bronx was organized in 1914. Its membership is 298.

These societies are all component parts of our organization, being affiliated with the state society and the American Medical Association. The State Medical Society of New York carries on five activities of especial interest. It publishes a monthly journal. It publishes an annual medical directory of New York, which includes also New Jersey and Connecticut. It defends its members when sued for alleged malpractice. This legal defense is accorded to every member in good standing, and the expenses are covered by the regular dues, no assessment or other charge being made. It maintains an active legislative committee which keeps close watch on all legislative work at Albany relating to medical subjects. It has a standing committee on medical economics.

The Medical Society of the County of New York, in addition to the usual society functions, takes an active interest in legislative matters and maintains a milk commission. It maintains a legal department at large expense for the prosecution of illegal and criminal practitioners. This work is the most extensive of its kind in the country.

The New York Academy of Medicine was founded in 1847 and incorporated in 1851. Its membership is limited to 1,200 resident fellows, and physicians of the entire city are eligible five years after graduation. Nonresident fellows are received to the number of 250. It has four special activities. It is divided into twelve sections, similar to those of the American Medical Association. Each section meets monthly and is presided over by its own chairman, while the Academy holds two meetings monthly presided over by the president. Its scientific work is of the highest type.

The second important feature of the academy's work is the academy building. This handsome structure shelters many professional organizations and is the medical center of Manhattan—in fact, of the greater city. The third and a most important feature of the academy's work is the maintenance of a medical library which now numbers 106,706 volumes, not including duplicates. The fourth is its committee on public health. This committee has developed a plan by which the public may be informed on medical questions, and the great departments of the city government may receive medical advice without advertising individual physicians or making them prominent. A question under consideration is referred to a subcommittee which reports to the whole committee. A decision, when reached, is given out as that of the Committee on Public Health, no names of individuals being given.

In the large size of their membership and the wide area from which it is drawn and in their peculiar and varied functions, the academy and the county societies differ from other medical societies and form a class by themselves. They divide between them functions which in some cities are fulfilled by a single body. These functions consist in the performance of certain duties to the public and to the medical profession as a whole. It is in this that they differ radically from other societies whose interests are centered in the *individual*. In these two societies interest is bestowed also

* We are indebted for this description of Medical New York City to the local committee on arrangements.

on the *profession* and the *public*. The division of function between them has been made with great skill. They work side by side in perfect harmony, the membership of one being almost wholly included in that of the other, while the same names are frequently found on the official boards of each. The "academy idea" as developed in New York has been productive of great good and has been widely copied by other cities.

Osler says that medical societies are professional cement which binds professional men together. Certain it is that they are the most potent of all agencies in bringing medical men into touch with each other and fostering fraternal relations. New York is certainly not lacking in medical societies. There are some, indeed, who feel that they have been injudiciously multiplied. Including the eleven sections of the Academy of Medicine there are 152 medical societies in the city, of which 123 are in New York County. Of these, twenty-six are devoted to special branches of medical science, the Neurological and Obstetrical Societies being examples. Recently a number of societies have been organized devoted to pure medical science, the Society of Experimental Biology being an example. In the earlier days a few general societies were ample, but the enormous expansion of the city has been followed by the formation of at least sixteen local societies, of which the Harlem Medical Association is an example. These societies vary from semipublic bodies to private clubs which meet in the homes of the members.

Some Hotels and Headquarters.

The remarkable hospital development of the past three decades has been followed by the formation of a new type of medical society, namely, the hospital alumni society. The first of these to be formed in New York was the Society of the Alumni of Bellevue Hospital, in 1886. There are now at least twenty-seven such societies, ranging in numbers from a few dozen to the 380 of Bellevue. Two benevolent societies stand in a group by themselves, namely, the Physicians' Mutual Aid Association and the Society for the Relief of Widows and Orphans of Medical Men.

These facts may suggest some of the difficulties which have been encountered by the local Committee on Arrangements. In most cities that committee has one county society alone to consider and provide for. In New York it has been obliged to consider five county societies with an aggregate membership of 4,164.

MEDICAL COLLEGES

There are ten medical colleges in the state of New York. Of these, seven are in New York City. The remaining three are in a line extending across the state, being located at Albany, Syracuse and Buffalo. They draw their students largely from New York State, and return them to the state in large proportion when graduated. Of the seven colleges in New York City, one is located in Brooklyn, one in Bronx County, and five in New York County.

The College of Physicians and Surgeons is the oldest medical college in the state, having been chartered in 1807. King's College had a medical school which was organized in 1767. In 1784 King's College became Columbia College, and in 1814 the medical faculty of Columbia College was merged in the College of Physicians and Surgeons. In 1860 the College of Physicians and Surgeons became the Medical Department of Columbia College. In 1896 Columbia College became Columbia University. The first president of the College of Physicians and Surgeons was Nicholas Romayne, who was also the first president of the New York County Medical Society.

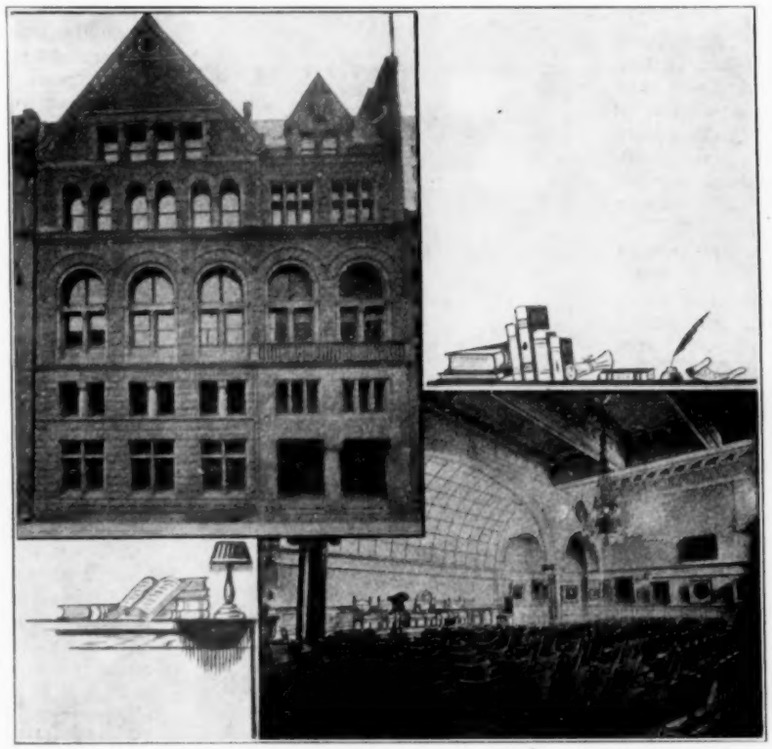
In the first faculty we find David Hosack, whose name has been perpetuated by the generosity of his descendants as Hosack Hall in the Academy of Medicine, in which the House of Delegates will meet. The second president was Samuel Bard, remembered in medical history as the man who first wrote a clear description of a type of "putrid sore throat" which was certainly diphtheria. His essay, published in 1770, Osler asserts, "was one of the most solid contributions made to medicine in America."

During its long history this college has occupied six sites, and is now located at Fifty-Ninth Street and Amsterdam Avenue. The college buildings, together with the Vanderbilt Clinic and Sloane Hospital for Women, form a notable group. Across the street is Roosevelt Hospital, with which it

is closely associated. In 1912 an alliance was effected with the Presbyterian Hospital, which permits the scientific and physiologic direction by the college of the medical, surgical and pathologic services of the hospital.

The University and Bellevue Hospital Medical College is the result of the union of two great medical schools. In 1841 a medical school was organized by the New York University. The first faculty was a notable one, but two names stand forth with especial prominence. Valentine Mott was the professor of surgery and John W. Draper professor of chemistry. The school was first located at 659 Broadway. It occupied three other sites until 1875, when a commodious building was erected at 210 East Twenty-Sixth Street, where instruction was continued until 1898. This is the building which the present generation remembers as the University Medical College.

Clinical instruction had been given in Bellevue Hospital by members of the staff since 1847. The clinical facilities were so great that it was felt that a medical school should be connected with the hospital. In 1861 the commissioners of public charities notified the medical board that they would allow a college building to be erected on the hospital grounds. This building was soon erected, and the faculty of the Bellevue Hospital Medical College was formed. It was truly a notable one, and the names of Austin Flint, Lewis A. Sayre, Fordyce Baker, Frank H. Hamilton, James R. Wood, Stephen Smith and J. W. S. Gouley stand out prominently. In 1884, Andrew Carnegie gave a sum of money for the building of a laboratory. This was the first laboratory in this country in which systematic instruction was given to medical students in pathology and bacteriology.



Above, Academy of Medicine; Below, Hosack Hall.

In 1898 these two medical schools consolidated, and the resulting medical school became an integral part of the New York University. A new college building was erected at the corner of First Avenue and Twenty-Sixth Street, and the Carnegie laboratory building became virtually part of the college building. In 1904 a new laboratory building was erected, and in 1910 the Carnegie laboratory was extended.

The Cornell University Medical College is the youngest of the three great medical schools in New York County. It was established in 1898. This undertaking had been contemplated by the trustees for several years, and was made possible by the gift to the university of a commodious and fully equipped building for medical instruction and by an endowment sufficient to maintain generously a vigorous school for higher education in medicine. The main college building occupies the block between Twenty-Seventh and Twenty-Eighth streets on First Avenue, and is directly opposite Bellevue Hospital. It comprises the medical school and dispensary. The Loomis Laboratory on Twenty-Sixth Street is used for undergraduate instruction and as a research laboratory. The first two years of the medical course may be taken at Ithaca, N. Y., the seat of Cornell University. Here, also, special courses preparatory to the study of medicine may be taken. The entrance requirements of Cornell Medical School are very severe. It stands in the first rank among the medical schools of the country.

The Long Island College Hospital was founded in 1857, and has occupied the same building since its founding. In 1887 the Hoagland Laboratory was established, and in 1896 the Polhemus Memorial Clinic was built. It is a handsome building and is amply endowed. The Long Island College is unique in the fact that the head of each college department is also the head of the same department in the hospital and dispensary. The buildings occupy a block on Henry Street between Pacific and Amity streets. It has 500 beds and maintains a large maternity department.

The Fordham University School of Medicine opened its doors in 1905. Fordham University was the name adopted in 1907 to supersede "St. John's College, Fordham." It is under supervision of the Jesuit order. The buildings are situated at the corner of Third Avenue and Fordham Road (One Hundred and Ninetieth Street), Borough of the Bronx.

The New York Homeopathic Medical College and Hospital was founded in 1860. It has occupied four sites, and removed to its present location, Eastern Boulevard and Sixty-Third Street, in 1889. It is closely associated with the Flower Hospital, which was opened for the reception of patients in 1890. It is regarded as being one of the highest type of homeopathic colleges.

The New York Medical School and Hospital for Women is a small homeopathic school situated at 17 West One Hundred and First Street. It was chartered in 1863.

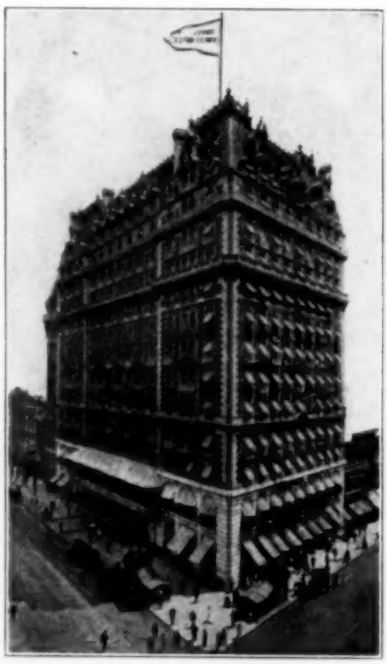
The New York Polyclinic Medical School and Hospital is now located in new and modernly constructed buildings at 341 West Fiftieth Street. The Polyclinic was organized in 1881, and for thirty years was located on East Thirty-Fourth Street. From its inception to the present day, Dr. John A. Wyeth has been its president and moving spirit. In 1912 the present building was occupied at 341 West Fiftieth Street. It is in some regards a new departure in hospital construction, being of the skyscraper type, and utilizes every foot of ground, which in New York is valued by the square inch. Its hospital contains 237 beds, and last year 4,896 patients were treated.

The New York Post-Graduate Medical School and Hospital, at Second Avenue and Twentieth Street, was organized in 1882, and the present building was opened in 1886. Drs. D. B. St. John Roosa and William A. Hammond were moving spirits in its founding. The number of beds is 406, and the number of patients treated annually is over 9,000. As a matter of fact, there are two institutions under one roof. The one is the hospital, already referred to; the other is the school for graduate physicians, with an attendance of over 700 annually. About five years ago the institution received a legacy by means of which its borders have been largely extended.

HOSPITALS

There are 102 hospitals in New York, and a host of dispensaries. Bellevue Hospital is the oldest and largest hospital of the city. It had its beginning in 1736, when a room was set aside in the poorhouse for hospital purposes. It was under the charge of Dr. John Van Beuren, a graduate of Leyden. Three years later a building was erected at the poorhouse by the city as a "Recepticle and Conviency of Such unhappy Poor as are or shall be Visited with any Malignant or Obnoxious disease." In 1794 "Belle Vue place, opposite the third mile stone" was purchased as a site for a quarantine hospital, and later the city hospital was located there. In 1816 the old buildings at Chambers Street were abandoned and two buildings were opened at Belle Vue for hospital purposes, one for male and one for female patients.

During the next forty years Bellevue Hospital was the scene of many epidemics of typhus fever, smallpox, and cholera. In those days there were times when internship meant more certain death than does enlistment in the army today. In a single year (1848) six members of the house staff died from typhus. A year or two later a summer came in which but two members of the staff were able to perform their duties, cholera then being the cause of the epidemic. In the early fifties, typhus, cholera, puerperal fever and erysipelas fairly made a pesthouse of the hospital. As late as 1874 there were within one week thirty-four deaths from puerperal fever. The obstetric service was then moved to Randall's Island, where it has since been conducted. The Emergency Hospital, however, was soon established for precipitate and emergency cases of confinement. For many years there was a special emergency hospital located in Twenty-Sixth Street and was attended by the staff of Bellevue. It is now housed in commodious and ample quarters in one of the new pavilions of the hospital. In 1907, arrangements were completed for the rebuilding by the city of New York of Bellevue at the expense of many million dollars. In the following year two of the new pavilions were opened, and 430 beds were made available for medical and obstetric cases. The pavilion for the city morgue was opened soon after. The morgue is the largest, most complete, and best appointed in the world. The laboratory building is also in use. It is one of the most complete hospital laboratory outfits in the country.



Hotel Knickerbocker.

The training school of Bellevue Hospital was the first training school for nurses in the United States, and has been the model on which most such schools have been organized. In 1896 the city of New York appropriated $628,000 for a new home for nurses. It is situated on East Twenty-Sixth Street opposite the entrance of the hospital, and is a model of its kind. In 1911, women nurses were placed in every ward of the hospital. The Mills school for male nurses was transformed into a school for the education of trained orderlies. A school for the education of midwives was opened in the old Emergency Hospital building. Owing to the large foreign population of New York, midwives are largely employed. Two years ago the capacity of the hospital was 1,379; the visiting staff numbered 101; the house staff, 70; nurses, 336; male attendants, 47; officers and employees, 725.

The City Hospital is located at the southern extremity of Blackwell's Island. It was originally known as Charity Hospital, but out of consideration for the sick poor the name was changed a few years ago. It was organized in 1846 and is managed by the Department of Public Charities. Its bed capacity is about 1,000. The City Hospital School of Nursing was the third school of its sort organized in the country. In connection with the Metropolitan Hospital it maintains at the foot of East Seventieth Street an emergency, relief and ambulance station. In January of this year new operating theaters were opened which are asserted to be the finest in the country, the sterilizing plants being particularly excellent. The City Maternity Hospitals are on Blackwell's Island and are associated with the City Hospital.

Patients with contagious diseases are received only in the hospitals of the department of health, which maintains three great hospitals, the Willard Parker Hospital in Manhattan, the Riverside Hospital on North Brother Island, and the Kingston Avenue Hospital in Brooklyn. The Mintern Hospital, situated near Willard Parker Hospital on East Sixteenth Street, has a large endowment and is designed for the treatment of private patients suffering from diphtheria and scarlet fever. While not a charity hospital, it proves a real charity to strangers in New York whose children are seized with scarlet fever or diphtheria in hotels or in homes of friends.

The oldest of the private hospitals are those maintained by the Society of the New York Hospital. The New York Hospital was organized in 1771. The present buildings on Sixteenth Street were occupied in 1877. The number of beds in the hospital is 270, and the number of bed patients treated annually is about 6,000. The number of outpatients treated is about 16,000 and the number of ambulance calls about 8,000 annually. The Society of the New York Hospital also maintains the House of Relief on Hudson Street and the Convalescent Cottages in White Plains, New York. Of equal importance with the New York Hospital is the Bloomingdale Hospital for mental diseases, widely known for years as Bloomingdale Asylum. It is now located at White Plains, N. Y., and is looked on as a most satisfactory hospital for the insane.

The Memorial Hospital at One Hundred and Sixth Street and Central Park West is largely endowed and occupies remarkably handsome buildings. It is devoted exclusively to the study of cancer and allied diseases.

The New York Lying-In Hospital was founded in 1798. During 1916, 7,451 patients were treated in all departments. The Sloane Hospital on Fifty-Ninth Street is also a large maternity hospital. Among other special hospitals the Manhattan Eye, Ear and Throat Hospital treated last year 9,258 patients in the beds, and 51,920 different patients in the dispensary. The New York Eye and Ear Infirmary is another institution whose patients run into the thousands.

It is impossible to enter on a description of the scores of other hospitals or to refer to them without apparent discrimination. The following figures may be given, however, as showing the work done by a few of the great private hospitals, whose work is of such magnitude that they are popularly regarded as public hospitals. During 1916, Mount Sinai Hospital treated 9,286 bed patients; Roosevelt Hospital, 4,832 patients; St. Luke's Hospital, 7,328; German Hospital, 10,281, and 34,058 in its dispensary; St. Vincent's Hospital, 5,798, and the Methodist Episcopal Hospital (Seney Hospital) in Brooklyn, 4,288.

PREVENTIVE MEDICINE

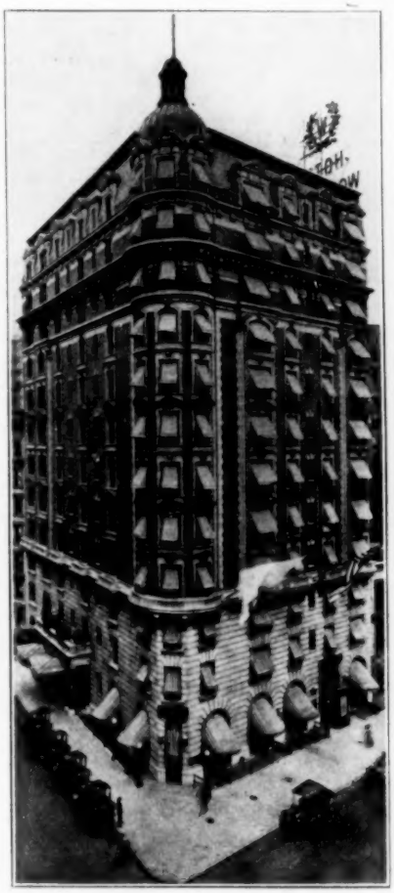
There are few subjects in which New York City takes greater pride than in the work done in preventive medicine by its department of health. For years the commissioners have been highly equipped scientists and each has done his share in advancing the standard originally set by Herman M. Biggs. The department has instituted many innovations, most of which have long been accepted the country over as legitimate and necessary work of a health department. It is impossible here even to enumerate the activities now daily utilized in New York for the prevention of disease.

TRANSPORTATION TO THE MEETING

Railroad and Pullman Fares to New York City

Those who are going to New York for the Annual Session are urged to consult the local ticket agent at their home town for complete information regarding fares, time limits, extentions and stop-over privileges available in making the trip. There is on file in every ticket office the traffic schedule which officially informs local agents of the rates from that point. Fellows should not leave the determination of the route desired until just before they are ready to start on the trip. Local ticket agents may have to obtain special tickets for these excursions from central points, and they must be arranged in time so that the tickets may be purchased when the journey is begun. These agents will also be able to give information concerning circuit routes which will permit making whatever side trips may be desired in connection with the journey to or from New York. Those from Chicago, St. Louis and the West may purchase short limit summer tourist tickets, which will be on sale to New York City, commencing June 1, at lower fare and with more liberal limit and stop-over privileges than apply in connection with reduced fares authorized for conventions. Round trip circle tour tickets, going one route and returning another, are available, sale commencing May 15, to New York and to Boston, in one direction via New York with a choice of many routes: through Niagara Falls, Montreal, Washington, D. C., Baltimore, and Norfolk, Va., including rail and water trips if desired.

Hotel Plaza.



Hotel Woodward.

Hotel Belmont.

In order to give a general idea of the fares available, the following round trip railroad fares and one-way Pullman lower berth charges to New York are given. In some instances, these fares are approximated:

	R. R. Fare	Pullman Fare		R. R. Fare	Pullman Fare
Buffalo	$16.45	$ 2.00	Indianapolis	32.50	5.00
Chicago	35.00	5.00	Kansas City, Mo.	51.20	7.50
Cincinnati	30.10	4.00	Louisville, Ky.	34.00	5.00
Cleveland	22.90	3.00	Milwaukee, Wis.	39.08	5.50
Columbus, Ohio	25.30	3.50	Minneapolis	54.00	7.00
Dallas, Texas	61.50	10.50	Omaha	59.10	7.50
Denver	78.70	11.00	St. Louis	40.00	6.00
Detroit	26.50	3.50	St. Paul	54.00	7.00

These rates are in accordance with those which have been announced by the various passenger associations listed below:

CENTRAL PASSENGER ASSOCIATION: Two cents per mile in each direction, but in no case more than summer tourist fares. Signature form of tickets will be sold June 3, 4 and 5, final return limit to reach the original starting point not later than midnight, June 12. A joint tariff authorizing fares for the annual session of the Association from points in the Central Passenger Association territory is now being compiled.

THE TRUNK LINE ASSOCIATION: This serves most of New York, Pennsylvania, New Jersey, Delaware, Maryland and West Virginia, also a part of Virginia, and announces that there will be available for those attending the coming session of the American Medical Association a railroad rate of 2 cents per mile in each direction with a minimum of $1 for the round trip on the certificate plan, going and returning via same route, only. Going tickets in connection with certificates to be sold June 3, 4 and 5 at one-way fares applicable to New York City on the certificate plan. These certificates must be obtained from the ticket agent at the starting point (or nearest station issuing through tickets to New York City) and to be valid for the reduced fares returning, must be endorsed by the secretary of the American Medical Association, indicating that the holder has been in attendance at the meeting and is entitled to the reduction, and must also be validated by a special agent on either June 5, 6 or 7. Return tickets will be sold on presentation of validated certificates June 5-11 at the difference between the fares paid on the going trip and the fares for the round trip; these latter tickets to be limited to continuous passage to destination, which must be reached in no case later than on June 12. No fee will be required for the validation of certificates.

NEW ENGLAND PASSENGER ASSOCIATION: Two cents per mile in each direction, short line mileage, going and returning via the same route and that one over which one-way tickets are regularly sold, and only from points where regular one-way fare to New York City is over $1. From points on the B. & A. and N. Y., N. H. & H. R. R.'s certificate plan arrange-

ments will be in effect from stations where the one-way fare to New York City is more than $1. Tickets to be sold or certificates issued and good going June 3, 4 and 5, and returning to reach original starting point not later than midnight of June 12. Reductions will not apply via the Bangor & Aroostook R. R., New England Steamship Company, nor Eastern Steamship Corporation (Metropolitan Line).

WESTERN PASSENGER ASSOCIATION AND SOUTHWESTERN PASSENGER ASSOCIATION: The members of the Western Passenger Association and Southwestern Passenger Association have not announced any reduced fares; but commencing June 1, 1917, round-trip summer tickets will be on sale to New York from points in the territory of those associations, at lower fares and with more liberal return limit and stop-over privileges than apply in connection with reduced fares authorized for conventions.

American Medical Special Trains

The New York Central Lines will run two trains from Chicago, one via the Michigan Central Railroad, leaving from Twelfth Street and Lake Front, at 5:40 p. m., June 2, arriving Niagara Falls Sunday morning, June 3, where the entire day will be spent visiting various points of interest. Special train will leave Niagara Falls at 7:20 p. m., Sunday, June 3, arriving New York Monday morning at 7:50. To permit those who desire to spend Monday, June 4, on the Hudson River from Albany to New York, a special car will be attached to the "American Medical Special" at Niagara Falls, and will be detached on arrival of the special at Albany, and placed for occupancy until 8 a. m. The other train for the accommodation of those who do not desire to spend the day at the Falls but to arrive at New York the next evening will leave from La Salle Street Station, Chicago, via the New York Central Railroad (Lake Shore) at 5:30 p. m., June 2, arriving New York 5:25 p. m. the next day. These are convenient schedules for those going from Chicago, and provide comfortable connections for those coming from points west of Chicago. These trains will consist of Pullman cars, including drawing-room and compartment cars, club car, observation car with ladies' maid, barber and valet service, and will run on the following schedule: A competent representative of the New York Central Lines will accompany each train to look after details and the comfort of the passengers.

Via Michigan Central

	Central Time
Leave Chicago June 2	5:40 p. m.
Leave Kalamazoo June 2	8:58 p. m.
Leave Battle Creek June 2	9:26 p. m.
Leave Jackson June 2	10:26 p. m.
Leave Detroit June 2	12:11 a. m.
	Eastern Time
Arrive Niagara Falls June 3	6:10 a. m.
Leave Niagara Falls June 3	7:20 p. m.
Arrive Albany June 4	4:00 a. m.
Arrive New York June 4	7:50 a. m.

Via New York Central

	Central Time
Leave Chicago June 2	5:30 p. m.
Leave Toledo June 2	11:15 p. m.
Leave Cleveland June 3	2:00 a. m.
	Eastern Time
Leave Rochester June 3	8:50 a. m.
Leave Syracuse June 3	10:35 a. m.
Leave Utica June 3	11:50 a. m.
Leave Albany June 3	2:05 p. m.
Arrive New York June 3	5:25 p. m.

An extra fare of $5 will be charged on these trains from Chicago and $2 from Cleveland.

Round trip tickets will be on sale to New York at reduced fares from all points on the New York Central Lines. Fares from the principal points will be as follows:

	Round-Trip R. R. Fares		One-Way Pullman Fares		
	Convention Fare	Summer Tourist Fare	Lower	Compt.	Drawing Room
Battle Creek, Mich.	$29.25	$31.70	$4.25	$12.00	$15.00
Bay City, Mich.	28.00	32.20	4.00	11.50	14.00
Chicago	*	35.00	5.00	14.00	18.00
Cincinnati	30.10	32.00	4.00	11.50	14.00
Cleveland	22.90	.....	3.00	8.50	11.00
Columbus, Ohio	25.30	29.00	3.50	10.00	13.00
Dayton, Ohio	28.10	30.50	4.00	11.50	14.00
Detroit	26.50	30.50	3.50	10.00	13.00
Grand Rapids, Mich.	30.55	31.70	4.50	13.00	16.00
Indianapolis	32.50	33.00	5.00	14.00	18.00
Jackson, Mich.	27.45	31.70	4.00	11.50	14.00
Kalamazoo, Mich.	30.15	31.70	4.50	13.00	16.00
Saginaw, Mich.	27.50	31.70	4.00	11.50	14.00
South Bend, Ind.	*	31.70	4.50	13.00	16.00
Springfield, Ohio	27.10	30.00	3.50	10.00	13.00
St. Louis	*	40.00	6.00	16.00	21.00
Terre Haute, Ind.	35.40	36.60	5.00	14.00	18.00
Toledo, Ohio	26.50	30.50	4.00	11.50	14.00

*Summer tourist fares will apply from these points.

Tickets will be on sale at convention fare, June 2, 3 and 4, final return limit to reach original starting point not later than midnight of June 12, 1917.

Tickets will be on sale at summer tourist fare from June 1 to September 30, final return limit to reach original starting point not later than thirty days from date of sale.

For the convenience of those coming from St. Louis, Indianapolis, Cincinnati, Columbus and the surrounding territory, the Cleveland, Cincinnati, Chicago & St. Louis Railway, "Big Four Route," will run special sleeping cars through to New York as follows, connecting with the foregoing train via the New York Central Railroad at Cleveland:

	Central Time
Leave St. Louis	12:00 noon
Leave Terre Haute	4:23 p. m.
Leave Indianapolis	6:15 p. m.
Arrive Cleveland	1:45 a. m.
Leave Cincinnati	6:05 p. m.
Leave Dayton	7:50 p. m.
Leave Springfield	8:33 p. m.
Leave Columbus	9:55 p. m.
Arrive Cleveland	1:45 a. m.
Leave Cleveland	2:00 a. m.
	Eastern Time
Arrive New York	5:25 p. m.

In addition, the New York Central Lines provide through service to New York as follows:

Via Michigan Central R. R.

	No. 8	No. 10	No. 48	No. 14	No. 36
Leave Chicago, C. T.	a. m. *9:05	a. m. 10:30	†	p. m. 3:00	a. m. 12:05
Leave Grand Rapids, C. T.	a. m. 11:05	.....	.....	p. m. 5:10	.....
Leave Saginaw, C. T.	a. m. 11:59	.....	.....	....	.....
Leave Bay City, C. T.	a. m. 11:30	.....	.....	....	.....
Leave Detroit, C. T.	p. m. 3:55	p. m. 6:20	p. m. 6:10	p. m. 10:55	a. m 8:15
Leave Buffalo, E. T.	p. m. 10:35	a. m. 1:15	a. m. 12:01	a. m. 7:40	p. m 7:30
Arrive New York, E. T.	p. m. 9:00	p. m. 3:30	a. m. 9:30	p. m. 8:45	a. m 7:03

* Extra fare Chicago to New York, $5.
† Extra fare Detroit to New York, $2.

Via C. C. C. and St. L.—Big Four Route

	No. 16	No. 20	No. 46
Leave St. Louis, C. T.	8:25 a. m.	5:00 p. m.	12:05 midn.
Leave Terre Haute, C. T.	12:58 p. m.	9:17 p. m.	5:11 a. m.
Leave Indianapolis, C. T.	2:45 p. m.	11:00 p. m.	7:00 a. m.
Arrive New York, E. T.	3:45 p. m.	8:00 p. m.	8:00 a. m.

An extra fare of $2 is charged on train No. 20 St. Louis to New York; $2 Terre Haute to New York; $1 Indianapolis to New York.

	No. 46	No. 6	No. 26	No. 42
Lv. Cincinnati, C. T.	8:30 a. m.	12:05 noon	3:00 p. m	12:05 midn.
Lv. Dayton, C. T.	10:10 a. m.	1:25 p. m.	4:23 p. m.	1:40 a. m.
Lv. Springfield, C. T.	10:50 a. m.	2:00 p. m.	5:02 p. m.	2:20 a. m.
Lv. Columbus, C. T.	12:00 noon	3:03 p. m.	6:03 p. m.	3:40 a. m.
Ar. New York, E. T.	8:00 a. m.	9:21 a. m.	3:45 p. m.	5:05 a. m.

VIA NEW YORK CENTRAL R. R.

	No. 44	No. 46	No. 6	No. 10	No. 26	No. 16	No. 14	No. 86	No. 90	No. 28
Lv. Chicago C. T.	....	8:25 a. m.	10:25 a. m.	10:30 a. m.	12:40 noon	1:40 p. m.	3:15 p. m.	8:00 p. m.	11:00 p. m.	11:45 p. m.
Lv. Toledo C. T.	....	1:40 p. m.	3:40 p. m.	4:45 p. m.	5:15 p. m.	7:45 p. m.	11:30 p. m.	1:30 a. m.	4:25 a. m.	5:00 a. m.
Lv. Cleveland C. T.	3:00 p. m.	5:00 p. m.	6:20 p. m.	7:45 p. m.	7:35 p. m.	10:35 p. m.	2:35 a. m.	5:55 a. m.	7:30 a. m.	8:00 a. m.
Lv. Buffalo E. T.	9:00 p. m.	10:05 p. m.	....	1:15 a. m.	.....	4:10 a. m.	9:30 a. m.	10:45 a. m.	1:00 p. m.	3:15 p. m.
Ar. New York E. T.	7:50 a. m.	8:00 a. m.	9:21 a. m.	3:30 p. m.	9:40 a. m.	3:45 p. m.	8:45 p. m.	8:00 p. m.	10:10 p. m.	5:05 a. m.

An extra fare is charged to New York on the following trains:

No. 46 from Chicago $6.
No. 6 from Chicago $6. Cleveland $2. Toledo $2.
No. 26 The Twentieth Century Limited. Chicago $8. Toledo $5. Cleveland $3.
No. 16 from Chicago $3.
No. 86 from Chicago $5.
No. 90 from Chicago $6.

Missouri Valley and Southwest Special

Arrangements have been made for a special through train to New York City for those going to New York from the Missouri Valley and the Southwest. This train will run from Dallas and Fort Worth, Texas; Oklahoma City, Wichita, Kansas City and St. Joseph to Chicago, over the Santa Fe railway; from Lincoln, Omaha, Des Moines and intermediate points, over the Illinois Central railway, and from Chicago to New York over the Pennsylvania lines. The service and appointments will be first class and sleepers will be run through to New York without change. Those from this territory, who have enjoyed previous trips to the American Medical Association annual sessions will appreciate the advantage of social intercourse and the opportunities for getting better acquainted on an excursion of this character. Stop-overs at all points, including Chicago, Washington, Philadelphia, Atlantic City, will be given those who desire. The regular low summer rates will be in effect. Those who desire to join this party should make reservations early in order to secure lower berths. This special will leave Kansas City on Saturday evening, June 2, at 8 o'clock. No excess fare charged on this train.

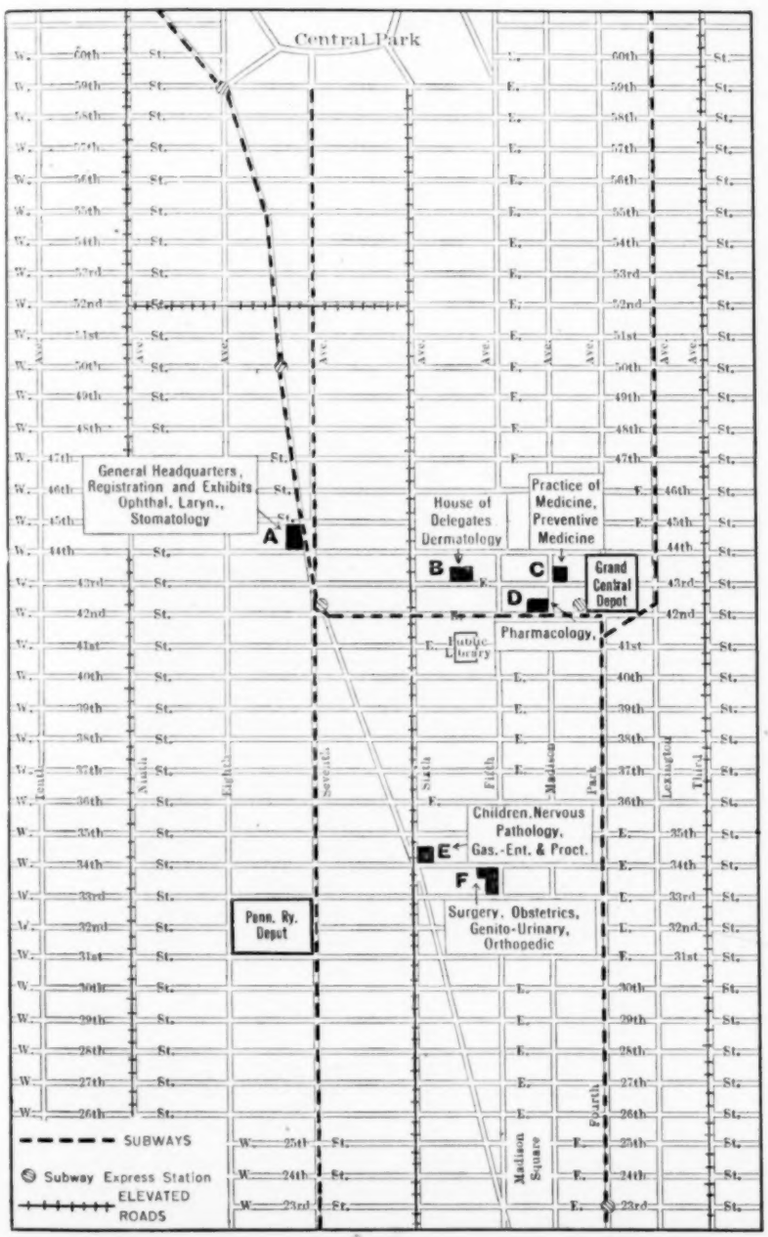
MEETING PLACES AND HOTEL HEADQUARTERS

This list has been compiled from the latest information furnished by the Local Committee on Arrangements.

HOUSE OF DELEGATES—Hosack Hall, Academy of Medicine Building, 17 West Forty-Third Street. (B)

GENERAL MEETING—The opening meeting of the Scientific Assembly will convene at 8:15 o'clock, Tuesday evening, June 5, instead of at 10 a. m., as at previous sessions.

SCIENTIFIC EXHIBIT, REGISTRATION BUREAU, COMMERCIAL EXHIBIT, INFORMATION BUREAU AND BRANCH POST-OFFICE—Hotel Astor, Times Square. (A)



Sections, Hotel Headquarters and Meeting Places

PRACTICE OF MEDICINE—Biltmore. Biltmore, Supper Room. (C)

SURGERY, GENERAL AND ABDOMINAL—Waldorf-Astoria. Waldorf-Astoria, Grand Ball Room. (F)

OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY—Waldorf-Astoria. Waldorf-Astoria, Astor Gallery. (F)

OPHTHALMOLOGY—Astor. Astor, North Ball Room. (A)

LARYNGOLOGY, OTOLOGY AND RHINOLOGY—Astor. Astor, East Ball Room. (A)

DISEASES OF CHILDREN—McAlpin. McAlpin, Winter Garden. (E)

PHARMACOLOGY AND THERAPEUTICS—Manhattan. Manhattan. (D)

PATHOLOGY AND PHYSIOLOGY—McAlpin. McAlpin, Blue Room. (E)

STOMATOLOGY—Astor. Astor, Yacht Room. (A)

NERVOUS AND MENTAL DISEASES—McAlpin. McAlpin, Roof Garden. (E)

DERMATOLOGY—Manhattan. (D) Academy of Medicine, Du Bois Hall. (B)

PREVENTIVE MEDICINE AND PUBLIC HEALTH—Biltmore. Biltmore, Music Room. (C)

GENITO-URINARY DISEASES—Waldorf-Astoria. Waldorf-Astoria, Green Room. (F)

ORTHOPEDIC SURGERY—Waldorf-Astoria. Waldorf-Astoria, Assembly Hall. (F)

GASTRO-ENTEROLOGY AND PROCTOLOGY—McAlpin. McAlpin, Green Room. (E)

HOTEL RESERVATIONS

Although New York can easily accommodate those in attendance on the annual session, hotel reservations should be made early.

The Committee on Arrangements requests that these be made directly with the hotels. In writing for reservations, it is well to state the number of rooms desired for the accommodation of your party, the day you expect to arrive in New York and how long you plan to remain. Also, name the rate you are willing to pay. Those who desire rooms with bath should state whether a tub or a shower is preferred. It will be a great comfort on arriving at New York to go at once to a hotel which is expecting you rather than to make a round of hotels, finding a number of them completely filled and finally being compelled to take the first lodgings which can be found in a hurried personal search. The list appearing in this issue locates the different hotels and gives their rates. Make your selection, write to the manager and take with you to New York his reply assuring you that a reservation has been made for your use. Then, on arriving all you will have to do is to go to that hotel and register.

TABLE OF DAILY RATES AND ACCOMMODATIONS OFFERED BY NEW YORK HOTELS

Hotels, Number of Rooms and Street Addresses	Rooms without Bath		Rooms with Bath		Parlor, Bedroom and Bath or Connecting Rooms for One or More Persons*
	For One Person	For Two Persons	For One Person	For Two Persons	
ASTOR—1,000—Times Square General Headquarters; also headquarters of the Sections on Ophthalmology, on Laryngology, Otology and Rhinology and on Stomatology.	$..... $.....	$..... $.....	$ 4.00 to $ 6.00	$ 5.00 to $ 8.00	$ 9.00 to $12.00
BILTMORE—1,000—Madison Ave. and 43d. Headquarters of the Sections on Practice of Medicine, and Preventive Medicine and Public Health.	....	....	4.00 to 5.00	6.00 to 7.00	....
MANHATTAN—700—Madison Ave. and 42d. Headquarters of the Sections on Pharmacology and Therapeutics and on Dermatology.	2.50	....	3.50 to 4.00	5.00	....
McALPIN—1,600—Broadway and 34th. Headquarters of the Sections on Diseases of Children, on Nervous and Mental Diseases, on Pathology and Physiology and on Gastro-Enterology and Proctology.	2.50 to 3.00	3.50 to 4.00	3.00 to 4.00	4.00 to 5.00	6.00 to 8.00
WALDORF-ASTORIA—1,200—Fifth Ave. and 34th. Headquarters of the Sections on Surgery, General and Abdominal; on Obstetrics, Gynecology and Abdominal Surgery; on Genito-Urinary Diseases and on Orthopedic Surgery.	3.00	4.00	4.00	6.00	14.00 .....
ALBEMARLE—525—Broadway and 54th	....	....	2.00	3.00	4.00 .....
ALBERT—450—University Place and 11th	1.00	....	1.50	....	....
ALGONQUIN—250—59 W. 44th	....	....	2.50	3.50	5.00 to 6.00
ANSONIA—1,600—Broadway and 73d	2.00	3.00	2.50	5.00	6.00 to 10.00
ARLINGTON—175—18 W. 25th: European	1.50	2.50	2.00	3.00	3.00 to 4.00
American	3.00	5.50	3.50	6.00	4.50 to 7.00
BELLECLAIRE—320—Broadway at 77th	....	....	2.50	3.50	5.00 to 6.00
BELMONT—700—Park Ave. and 42d	2.50 to 3.50	3.50 to 4.50	3.50 to 8.00	4.50 to 9.00	....
BERKLEY—300—170 W. 74th	....	....	3.00	5.00	....
BLACKSTONE—300—50 E. 58th	....	....	2.50	4.00	5.00 to 6.00
BRESLIN—500—Broadway and 29th	2.00 to 3.00	4.00 to 5.00	2.50 to 4.00	5.00 to 8.00	....
BRISTOL—180—122 W. 49th: European	1.50	2.00	2.00	3.00	4.00 to 6.00
American	3.00	5.00	3.50	6.00	7.00 to 12.00
BROADWAY CENTRAL HOTEL—600—Broadway and 3d	1.00 to 1.50	2.00	2.00	3.00	....
BROZTELL—250—Fifth Ave. and 27th	....	....	1.50	2.50	....
BUCKINGHAM—260—5th Ave. and 50th	1.50	2.50	2.50	3.50	....
CALUMET—140—340 W. 57th	....	....	1.50	2.50	....
CLARIDGE—250—Broadway and 44th	2.50	3.50	3.00 to 6.00	4.00 to 8.00	8.00 .....
CLENDENING—230—202 W. 103d	....	....	1.50 to 3.00	2.00 to 3.00	....
COLLINGWOOD—250—45 W. 35th	1.50	2.00	2.50	3.00 to 3.50	5.00 to 7.50
COLONIAL—300—81st St. and Manhattan Sq	1.50	....	2.00	....	....
CONTINENTAL—300—Broadway and 41st	....	....	2.00 to 3.00	3.00 to 4.00	....
CUMBERLAND—250—Broadway at 54th	1.50 to 2.00	2.50 to 3.00	2.00 to 2.50	3.00 to 3.50	4.00 to 5.00
DEVON—200—70 West 55th	....	....	3.00	5.00	5.00 to 6.00
EARLE—150—103 Waverly Pl.: European	....	....	2.00	3.00	4.00 to 5.00
American	....	....	3.50	5.00	6.00 to 7.00
ENDICOTT—600—Columbus Ave. and 81st	1.00 to 1.50	2.00 to 2.50	1.50 to 3.50	250 to 5.00	....
FLANDERS—300—135 W. 47th	....	....	1.50 to 2.50	2.50 to 3.00	3.50 to 4.00
FOURTEEN EAST 60TH—350	....	....	3.00 to 4.00	3.00 to 4.00	8.00 .....
GOTHAM—400—Fifth Ave. and 55th	....	....	4.00 to 5.00	5.00 to 8.00	....
GREAT NORTHERN—400—118 W. 57th	....	....	2.50 to 3.00	3.50 to 4.00	5.00 to 7.00
HARGRAVE—300—110 West 72d	....	....	2.00	2.50	....
HERALD SQUARE—310—114 W. 34th	1.50	....	2.00	....	5.00 .....
HERMITAGE—250—Seventh Ave. and 42d	1.50 to 2.00	2.50 to 3.00	2.00 to 3.00	3.50 to 5.00	....
HOLLAND HOUSE—350—5th Ave. and 30th	....	....	3.00	4.00	5.00 to 8.00
HOLLEY—200—Washington Sq. W.: European	....	....	1.50	2.50	....
American	....	....	3.00	5.00	....
IMPERIAL—800—Broadway and 32d	2.00	3.00	2.50 to 3.00	4.00	5.00 .....
JUDSON—200—53 Washington Sq.: European	1.00	2.00	1.50	2.50	....
American	2.50	5.00	3.00	6.00	....
KNICKERBOCKER—600—Broadway and 42d	2.50	4.00	3.50	5.00 to 8.00	....
LAURELTON—150—145 W. 55th	....	....	2.00	3.00	....
LE MARQUIS—170—12 E. 31st: European	1.50	2.00	2.00	3.00	....
American	3.00	5.00	3.50	6.50	....
LEONORI—225—Madison Ave. and 63d	1.50	....	....	3.00	5.00 to 10.00
LONGACRE—250—157 West 47th	1.00	....	1.50 to 2.50	....	....
LUCERNE—300—201 W. 79th	....	....	1.50	2.00	....
MADISON SQUARE—200—37 Madison Sq	....	....	2.00	3.00 to 3.50	4.00 to 8.00
MAJESTIC—700—W. 72d at Central Park	2.00	3.00	2.50	4.00	6.00 to 8.00
MANHATTAN SQUARE—300—50 W. 77th	....	....	2.50	3.00	3.50 to 10.00
MARGARET—200—97 Columbia Heights, Brooklyn	1.00	....	2.00	....	3.00 .....
MARIE ANTOINETTE—500—Broadway and 66th	2.00	4.00	3.00	5.00	8.00 .....
MARLTON—150—3 W. 8th	1.00 to 2.00	2.00 to 3.00	2.00 to 3.00	3.00 to 4.00	....
MARTHA WASHINGTON—425—29 E. 29th (women only)	1.50	2.50	3.00	4.00	....
MARTINIQUE—625—Broadway and 32d	2.00	3.00	2.50	3.50	6.00 .....
MURRAY HILL—600—Park Ave. and 40th	2.00	3.00	3.00	4.00	5.50 to 7.50
NASSAU—500—Long Beach	....	....	4.00 to 5.00	5.00 to 8.00	....
NETHERLAND—400—Fifth Ave. and 59th	1.50 to 2.00	....	2.00 to 4.00	3.50 to 5.00	....
NEW GRAND—400—Broadway and 31st	1.00	....	1.50	....	....
PARK AVENUE—430—Park Ave. and 32d	1.50 to 2.00	2.50 to 4.00	3.00	4.00 to 5.00	....
PLAZA—750—5th Ave. and 58th	....	....	4.00 to 5.00	6.00 to 7.00	7.00 to 10.00
PRINCE GEORGE—750—5th Ave. and 28th	....	....	2.50	4.00	....
RITZ-CARLTON—425—Madison Ave. and 46th	....	....	5.00	7.00 to 10.00	....
RUTLEDGE—250—Lexington and 30th (women only):					
European	1.00	2.00	1.50	2.50	....
American	2.50	5.00	3.00	6.00	....
ST. DENIS—250—Broadway and 11th	1.00	2.00	2.00	3.00	....
ST. MARGARET—130—129 W. 47th	1.00	....	1.50	....	3.50 .....
ST. PAUL—225—50th St. and Columbus Ave	1.00	2.00	2.00	3.00	....
ST. REGIS—340—Fifth Ave. and 55th	4.00	5.00	5.00 to 6.00	6.00 to 10.00	....
SAN REMO—600—Central Pk. W. and 74th	....	....	2.00	2.50	4.00 to 5.00
SEVILLE—475—Madison Ave. and 29th	1.50	2.50	2.50	3.00	....
SHERMAN SQUARE—500—Broadway and 70th	....	....	2.00 to 2.50	....	....
SOMERSET—225—150 W. 47th	2.00	3.00	....	....	4.00 .....
UNION SQUARE—130—15th St. and 4th Ave	1.50 to 2.00	3.00 to 4.00	....	....	4.00 to 7.00
VANDERBILT—600—34th St. and Park Ave	....	....	3.00	5.00	....
VAN RENSSELAER—200—11th St. near 5th Ave:					
European	....	....	1.50	2.00	2.50 to 3.00
American	....	....	3.00	5.00	6.00 to 8.00
WALLICK—400—Broadway and 43d	1.50 to 2.00	2.50 to 3.00	2.00 to 3.00	4.00 to 6.00	....
WEBSTER—160—40 W. 45th	....	....	2.50	3.50	4.00 .....
WILLARD—130—252 W. 76th	....	....	1.50	2.00	....
WOLCOTT—300—31st St. and Fifth Ave	2.00	....	2.50	5.00	....
WOODSTOCK—365—43d St. near Broadway	2.00	....	2.50	3.50	5.00 to 8.00
WOODWARD—400—Broadway and 55th	1.50	....	2.00	3.00	4.00 .....
YORK—250—Seventh Ave. and 36th	1.50 to 2.00	2.50 to 3.00	2.00 to 3.00	3.50 to 5.00	....

* For definite information concerning accommodations offered and rates, write to the hotels.

REGISTRATION

The Importance of Registering Early—A Few Suggestions Which Will Facilitate Registration

The Bureau of Registration will be located in the Grand Ball Room, Hotel Astor, Broadway, Forty-Fourth and Forty-Fifth Streets. A committee of local physicians will assist those desiring to register. A branch postoffice will be opened, and a bureau of information established in connection with the Registration Bureau.

Every one who registers will be required to fill out completely, except the blank space for the number, the spaces on both parts of the double registration cards, which will be found on the tables in front of the Registration Bureau. These entries should be written very plainly, or printed, as the cards are given to the printer to use as "copy" for the *Daily Bulletin*.

1. Fellows who have their pocket cards with them can be registered with little or no delay. They should present the filled out registration card, together with their pocket card, at one of the windows marked "Registration by Pocket Card." There the clerk will compare the two cards, stamp the pocket card and return it, and supply the Fellow with a copy of the official program and other printed matter of interest to those attending the annual session.

2. Those Fellows who have forgotten their pocket cards should present the filled in registration card at the window marked "Paid—No Card." The work of registration at this window will be conducted as rapidly as possible; but the necessity of finding the Fellow's name on the Fellowship roster will occupy time and will occasion inconvenience to those who neglect to bring their pocket cards with them.

3. The Fellow whose 1917 dues are unpaid should present his filled in registration card with the amount of his Fellowship dues ($5) at one of the windows marked "Cash." Here, too, there will be occasioned some delay; but the work of registering will be conducted as promptly as possible.

Hotel Claridge

4. Subscribers and others desiring to qualify as Fellows should present a filled in registration card, together with a formal application for Fellowship at the window marked "New Fellows." These applications for Fellowship can be obtained at Window No. 1 of the Registration Bureau or from the members of the Committee on Registration. In order to qualify as a Fellow, the applicant must be officially reported as a member of the constituent association of the state in which he resides, and in addition to filing this formal application, he must pay his annual Fellowship dues for the current year; if already a subscriber to THE JOURNAL, with his subscription paid for a term to or beyond Jan. 1, 1918, no additional payment is necessary. If subscription is not paid in

full for the current year, the payment of a sum to extend it to Jan. 1, 1918, is required.

The registration of new Fellows will be greatly facilitated if they will provide themselves with certificates of membership issued by the secretary of their state association, certifying to their membership in the state and county branches of the organization.

It will assist in registering if those who desire to qualify as Fellows will file their applications and qualify as Fellows by writing directly to the American Medical Association, 535 North Dearborn Street, Chicago, so that their Fellowship may be entered not later than May 25. Any applications received later than May 25 will be given prompt attention, but the Fellowship certificate and pocket card may not reach the applicant in time so that he can use this card in registering at the New York session, and he may be required to make a second payment of his Fellowship dues, which must be held until the records at headquarters can be consulted after the close of the session, when any excess payment will be adjusted.

If, however, a member of the Association neglects to qualify as a Fellow before reaching New York, he may be entered as a Fellow at the meeting, as suggested above.

POSTOFFICE

An Association Postoffice will be maintained at the Registration Bureau in the Grand Ball Room, Hotel Astor, Broadway, Forty-Fourth and Forty-Fifth Streets. Guests are requested to order mail addressed to them "Care American Medical Association, Hotel Astor, New York City," or to their hotels, as preferred.

THE SCIENTIFIC EXHIBIT

The Scientific Exhibit will be housed in the Belvedere, the summer roof garden of the Hotel Astor. This room, over 200 feet long, is located on the roof of the hotel and is constructed almost entirely of glass, having glass sides and roof. Being admirably located, it promises to be a favorite gathering place for the members during the session. Direct elevator service connects the Belvedere with the main lobby of the hotel and with the Ball Room, in which will be located the Registration Office and the Commercial Exhibit.

The Roentgen-ray exhibit will be in the form of projections from lantern slides. A special room for this purpose has been secured.

The exhibits give promise of being fully up to the standard of previous years. Among those offering exhibits this year are:

Association for the Prevention and Relief of Heart Disease, New York, an exhibit on heart work—charts, placards, folders, etc.

Dr. George A. Baitsell, New Haven, Conn., an exhibit on fibrous tissue in wound healing.

Bellevue Hospital, New York, museum exhibit.

Beth Israel Hospital, New York, an exhibit on pathology and bacteriology.

Hospital Social Service, New York, an exhibit on hospital social service.

Dr. Edward B. Krumbhaar, Philadelphia, an exhibit on electrocardiographic records; charts, specimens, etc., of experimental trypanosomiasis.

Dr. Mary R. Lawson, New London, Conn., exhibit on malarial parasites.

Dr. John H. Larkin, New York, rare and unusual pathologic lesions (mounted museum specimens).

Marion County (Ind.) Medical Society, bronze mural tablet memorial to John Stough Bobbs.

Mayo Clinic, Rochester, Minn.

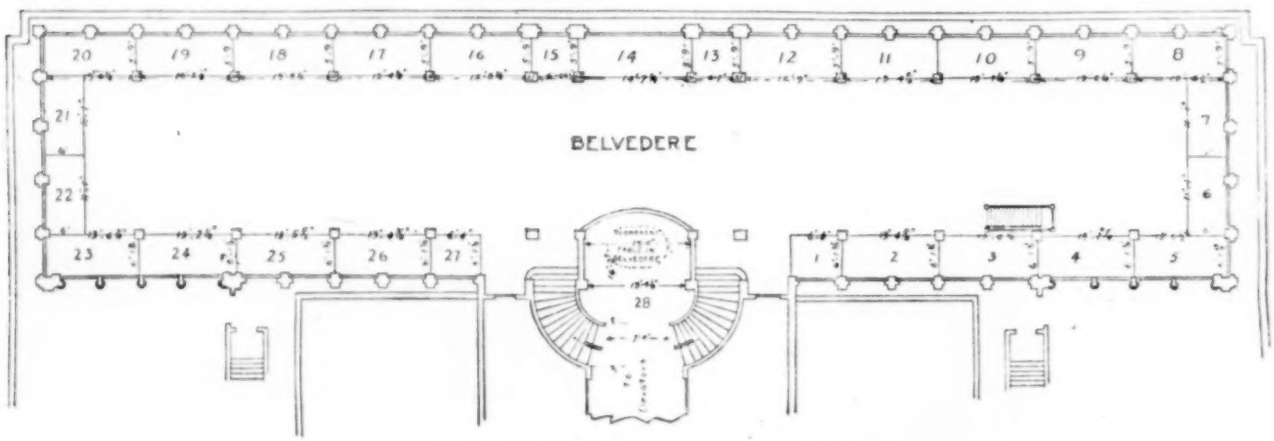
New York Health Department, Albany, N. Y., wall exhibits and models on child welfare, rural sanitation, tuberculosis, adult life diseases, and milk.

Dr. B. S. Oppenheimer, New York, exhibit on the cardiovascular system.

Dr. C. W. Perkins, New York, Roentgen-ray plates.

Dr. Herman B. Philips, New York, an exhibit on new apparatus for continuous drainage of empyemas.

Dr. Edward Reynolds, Boston, forty photomicrographs on sterility.



The Belvedere: Scene of the Scientific Exhibit.

Dr. Joseph C. Bloodgood, Baltimore, an exhibit on cancer.

Dr. James T. Case, Battle Creek, Mich., roentgenologic studies on colon physiology.

Dr. William M. L. Coplin, Philadelphia, a collection of hypoplastic kidneys.

Dr. A. W. Crane, Kalamazoo, Mich., an exhibit on the roentgenocardiograph.

Department of Anatomy, University and Bellevue Hospital, Medical College, New York, casts of human abdominal pelvic and thoracic viscera.

Dr. Robert L. Dickinson, Brooklyn, an exhibit of charts on hospital organization.

Dr. Edward Evans, La Crosse, Wis., bronze plaque for new operating room, St. Francis Hospital, La Crosse, Wis.

Dr. Henry W. Frauenthal, Hospital for Deformities and Joint Diseases, New York, exhibit of colored photographs, types of apparatus and demonstration of method of treatment in cases of infantile paralysis.

Dr. P. M. Hickey, Detroit, roentgenograms of the lower spine.

Dr. Arthur F. Holding, N. Y., lantern slides illustrating precancerous conditions before and after treatment, superficial cancerous conditions before and after treatment, and deep cancerous conditions before and after treatment.

Dr. J. Holinger, Chicago, microscopic exhibit on deformities of the ear.

Dr. J. Shelton Horsley, Richmond, Va., illustrations of original surgical procedures.

Dr. Paul Roth, Battle Creek, Mich., an exhibit on various methods of estimating alveolar carbon dioxid tension.

Dr. J. Morris Slemons, New Haven, Conn., an exhibit on placental pathology.

Dr. Torald Sollmann, Cleveland, an exhibit of paraffin bandages.

Dr. Edmond Souchon, New Orleans, a dissection of the muscles and arteries of the head and neck.

Dr. Alfred A. Strauss, Chicago, charts and specimens illustrating: 1. Pylorectomy by submucous fascial transplant method. 2. Reconstruction of the pylorus by fascial transplants after resection for ulcer.

Dr. R. J. Terry, St. Louis, an exhibit on heredity, development, hypophysis and cleidocranial dysostosis.

MEETINGS OF NONAFFILIATED ORGANIZATIONS

The following medical societies are listed to hold their annual conventions and congresses in New York preceding the Scientific Assembly of the American Medical Association: American Academy of Medicine, June 4-5; American Association of Anesthetists, June 2; American Association of Industrial Physicians and Surgeons, June 4; American Medico-Psychological Association, May 29-June 1; American Proctologic Society, June 4-5; American Radium Society, June 4; American Society of Tropical Medicine, June 4-5; American Therapeutic Society, June 1-2.

PRELIMINARY PROGRAM OF THE SCIENTIFIC ASSEMBLY

THE PROGRAMS OF THE SECTIONS

Outline of the Scientic Proceedings — The Preliminary Program and the Official Program

The following papers are announced to be read before the various sections. The order here is not necessarily the order which will be followed in the Official Program nor is the list complete. The Official Program will be a pamphlet similar to those issued in previous years, and will contain the final program of each section with abstracts of the papers, also lists of committees, programs of the General Meeting and of the meetings of the House of Delegates, lists of entertainments, map of New York and other information. To prevent misunderstandings and to protect the interest of advertisers, it is here announced that this Official Program will contain no advertisements. It is copyrighted by the American Medical Association and will not be distributed before the session. A copy will be given to each member on registration.

SECTION ON PRACTICE OF MEDICINE

MEETS IN SUPPER ROOM, HOTEL BILTMORE

OFFICERS OF SECTION

Chairman—HENRY A. CRISTIAN, Boston.
Vice Chairman—DOUGLAS VANDERHOOF, Richmond, Va.
Secretary—JAMES S. MCLESTER, Birmingham, Ala.
Executive Committee—CHARLES LYMAN GREENE, St. Paul; THOMAS MCCRAE, Philadelphia; ROGER S. MORRIS, Cincinnati.
(Stenographer—Dr. E. FRANKLIN SMITH, Richmond Hill, L. I., N. Y.)

Wednesday, June 6—9 a. m.

1. Chairman's Address: Visceral Disturbances in Patients with Cutaneous Lesions of the Erythema Group.
HENRY A. CHRISTIAN, Boston.
2. Clinical Manifestations of Gallbladder Disease. A Study of 1,000 Cases. FRANK SMITHIES, Chicago.
Discussion to be opened by RICHARD C. CABOT, Boston, and DAVID RIESMAN, Philadelphia.
3. Dilated Duodenum, with Especial Reference to Chronic Duodenal Obstruction in Visceroptosis.
DOUGLAS VANDERHOOF, Richmond, Va.
Discussion to be opened by LEWIS A. CONNER, New York, and THOMAS R. BROWN, Baltimore.
4. Clinical Features of Prolonged and Severe Secondary Anemia. ALFRED STENGEL, Philadelphia.
5. Methods and Results in the Treatment of Pernicious Anemia. LEWELLYS F. BARKER, Baltimore.
Discussion to be opened by HENRY A. CHRISTIAN, Boston, and GEORGE DOCK, St. Louis.
6. A Clinical and Experimental Study of a Lymphoid Splenomegaly With and Without Leukemia.
KENNETH M. LYNCH, Charleston, S. C.
Discussion to be opened by ALFRED STENGEL, Philadelphia, and WILLIAM G. MACCALLUM, New York.

Wednesday, June 6—2 p. m.

7. The Vegetative Nervous System in Pulmonary Tuberculosis. FRANCIS M. POTTENGER, Monrovia, Calif.
Discussion to be opened by SMITH ELY JELLIFFE, New York, and FRANK SMITHIES, Chicago.
8. The Value of Prolonged Rest in the Treatment of Pulmonary Tuberculosis. JOSEPH H. PRATT, Boston.
Discussion to be opened by LEWIS J. MOORMAN, Oklahoma City.
9. Report of Studies Concerning Acute Lobar Pneumonia.
RUFUS I. COLE, New York.
Discussion to be opened by LAWRENCE LITCHFIELD, Pittsburgh, and DAVID BOVAIRD, New York.
10. Studies on the Cause and Treatment of Bronchial Asthma.
I. CHANDLER WALKER, Boston.
Discussion to be opened by ROBERT H. BABCOCK, Chicago, and WARFIELD T. LONGCOPE, New York.
11. Botulism: A Clinical and Experimental Study.
ERNEST C. DICKSON, San Francisco.

Thursday, June 7—9 a. m.

12. Cough Dilatation and Timing of Cough Dilatation: A Functional Heart Test.
J. BIRNEY GUTHRIE, New Orleans.
13. Studies of the Heart's Functional Capacity.
THEODORE B. BARRINGER, JR., New York.
Discussion to be opened by T. STUART HART and BERNARD S. OPPENHEIMER, New York.
14. A Study of Arterial Sounds.
STEWART R. ROBERTS, Atlanta, Ga.
Discussion to be opened by WILLIAM S. THAYER, Baltimore, and GEORGE DOCK, St. Louis.
15. The Vital Capacity of the Lungs and Its Relation to the Clinical Condition in Heart Disease.
CHARLES W. MCCLURE and FRANCIS W. PEABODY, Boston.
Discussion to be opened by JOSEPH H. PRATT, Boston, and CHARLES F. HOOVER, Cleveland.
16. The Percussion and Roentgen-Ray Findings After Injections of the Pericardium.
ROGER S. MORRIS and ELLIS R. BADER, Cincinnati.
Discussion to be opened by WILLIAM S. THAYER, Baltimore.
17. A Clinical Study of 200 Cases of Angina Pectoris.
JAMES B. HERRICK, Chicago.
Discussion to be opened by THEODORE C. JANEWAY, Baltimore, and JOSEPH L. MILLER, Chicago.
18. Electrocardiographic Changes Associated with Myocardial Involvement, with Special Reference to Prognosis.
BERNARD S. OPPENHEIMER and MARCUS A. ROTHSCHILD, New York.
Discussion to be opened by WILLIAM G. MACCALLUM and HORATIO B. WILLIAMS, New York.

Thursday, June 7—2 p. m.

Election of Officers

19. The Blood Lipoids in Diabetes.
ELLIOTT P. JOSLIN, W. R. BLOOR and HORACE GRAY, Boston.
Discussion to be opened by REGINALD FITZ, New York.
20. The Influence of the High Calory Diet on the Course of Typhoid Fever. WARREN COLEMAN, New York.
Discussion to be opened by EUGENE F. DUBOIS, New York, and DUDLEY D. ROBERTS, Brooklyn.
21. A Study of Chronic Arthritis. FRANK BILLINGS, Chicago.
22. Gastric Crises of Spinal Syphilis: A Clinical and Laboratory Study of Four Cases.
B. B. VINCENT LYON, Philadelphia.
Discussion to be opened by JOSEPH SAILER and DAVID RIESMAN, Philadelphia.

Friday, June 8—9 a. m.

23. Bence-Jones Proteinuria: The Frequency of Its Occurrence, the Criteria of Its Presence, and Its Possible Relationship to Nephritis with Hypertension.
SYDNEY R. MILLER and WALTER A. BAETJER, Baltimore.
Discussion to be opened by L. F. BARKER, Baltimore.
24. The Dietetic Treatment of Nephritis, Controlled by the Chemical Examination of the Blood.
ARTHUR F. CHACE and A. R. ROSE, New York.
Discussion to be opened by HERMAN O. MOSENTHAL, Baltimore, and EUGENE F. DU BOIS, New York.
25. Nephritis from the Standpoint of Urea Excretion.
FRANKLIN C. MCLEAN, New York.
Discussion to be opened by HENRY A. CHRISTIAN, Boston, and WARFIELD T. LONGCOPE, New York.
26. Nature and Treatment of Chronic Parenchymatous Nephritis (Nephrosis). ALBERT A. EPSTEIN, New York.
Discussion to be opened by NATHAN E. BRILL and VICTOR C. MYERS, New York.
27. The Application of Indirect Colorimetry in the Clinic.
WALTER M. BOOTHBY, Rochester, Minn.
Discussion to be opened by E. F. DU BOIS, New York.

SECTION ON SURGERY, GENERAL AND ABDOMINAL

MEETS IN GRAND BALL ROOM, WALDORF-ASTORIA

OFFICERS OF SECTION

Chairman—WILLIAM D. HAGGARD, Nashville, Tenn.
Vice Chairman—ARTHUR A. LAW, Minneapolis.
Secretary—EUGENE H. POOL, New York.
Executive Committee—CHARLES H. FRAZIER, Philadelphia; CHARLES H. PECK, New York; E. WYLLYS ANDREWS, Chicago.
(Stenographer—MRS. M. C. REPP, Philadelphia)

Wednesday, June 6—9 a. m.

1. Chairman's Address: Surgery of the Spleen.
WILLIAM D. HAGGARD, Nashville, Tenn.
2. The Problem of Unnecessary Operations and of Incompetent Surgeons. ARTHUR DEAN BEVAN, Chicago.
Discussion to be opened by J. M. T. FINNEY, Baltimore, and GEORGE E. BREWER, New York.
3. The Surgical Significance of Gastric Hemorrhage.
DONALD C. BALFOUR, Rochester, Minn.
Discussion to be opened by CHARLES L. SCUDDER, Boston.
4. Modification in the Technic of Major Gastric Surgery.
LEWIS L. MCARTHUR, Chicago.
Discussion to be opened by JOHN B. DEAVER, Philadelphia.
5. Intravisceral and Intra-Abdominal Pressure.
ROBERT C. COFFEY, Portland, Ore.
Discussion to be opened by EDWARD MARTIN, Philadelphia.
6. A New Operation for Floating Kidney.
WILLARD BARTLETT, St. Louis.
Discussion to be opened by HUBERT A. ROYSTER, Raleigh, N. C.

Wednesday, June 6—2 p. m.

7. Artificial Respiration. GEORGE E. FELL, Chicago.
Discussion to be opened by ALBERT J. OCHSNER, Chicago, and WALTER M. BOOTHBY, Boston.
8. Clinical and Experimental Data in Relation to Fat Transplantation. ALLEN B. KANAVEL, Chicago.
Discussion to be opened by ALEXIUS MCGLANNAN, Baltimore.
9. The Abortive Treatment of Infection.
WILLIAM S. O'N. SHERMAN, Pittsburgh.
Discussion to be opened by CHARLES L. GIBSON, New York, and GEORGE W. HAWLEY, Bridgeport, Conn.
10. The Evolution of Cancer of the Breast.
PARKER SYMS, New York.
Discussion to be opened by DANIEL N. EISENDRATH, Chicago, and HOMER GAGE, Worcester, Mass.
11. Absorbable Metal Clips for Buried Sutures and Ligatures, and Special Alloy for Rapid Absorption.
E. WYLLYS ANDREWS, Chicago.
Discussion to be opened by RUDOLPH MATAS, New Orleans.
12. The Closure of Cleft Palate: A Technic and the Reasons for It. HARRY M. SHERMAN, San Francisco.
Discussion to be opened by VILRAY P. BLAIR, St. Louis.

Thursday, June 7—9 a. m.

13. The Rectangular Flap Incision for Operations Within the Upper Abdomen. WILLY MEYER, New York.
Discussion to be opened by FRED T. MURPHY, St. Louis.
14. Advantages of the End-Result System to Surgical Science.
ERNEST A. CODMAN, Boston.
Discussion to be opened by ROBERT L. DICKINSON, Brooklyn.
15. The Diagnosis of Acute Pancreatitis, with Report of Thirty-Three Cases. WILLIAM LINDER, Brooklyn.
Discussion to be opened by JOSEPH RANSOHOFF, Cincinnati.
16. Surgery of Bones and Joints, with Especial Reference to the Open Operative Treatment of Fractures, and a Method of Arthroplasty in Ankylosis of the Elbow Joint (Lantern Demonstration).
HUGH MCKENNA, Chicago.
Discussion to be opened by PHILIP H. K. KREUSCHER, Chicago.
17. Results of Treatment of Osteomyelitis.
MALVERN B. CLOPTON, St. Louis.
Discussion to be opened by EDWARD H. NICHOLS, Boston.
18. Gunshot Fractures. J. RILUS EASTMAN, Indianapolis.
Discussion to be opened by EDGAR L. GILCREEST, Dallas, Texas.

Thursday, June 7—2 p. m.

Election of Officers

SYMPOSIUM ON THE THYROID GLAND

19. Choice of Method in Operations on the Pituitary Body.
CHARLES H. FRAZIER, Philadelphia.
20. Studies in Experimental Hyperthyroidism.
E. C. KENDALL, Rochester, Minn.
21. Graves' Disease. GEORGE W. CRILE, Cleveland.
22. Constitutional Disturbances Which Come with Chronic Goiter. CHARLES N. DOWD, New York.
Discussion on the Thyroid Gland to be opened by HARVEY CUSHING, Boston, and LEWELLYS F. BARKER and WILLIAM S. HALSTEAD, Baltimore.
23. Malignant Neoplasm of the Thyroid with Metastases in the Intestine and in Bone.
JOHN F. BINNIE, Kansas City, Mo.
Discussion to be opened by JAMES E. THOMPSON, Galveston, Texas.
24. Tumor of the Intercarotid Body.
FRED B. LUND, Boston.
Discussion to be opened by STANLEY STILLMAN, San Francisco.

Friday, June 8—9 a. m.

25. Sodium Citrate Blood Transfusion: A Comparison.
BERTRAM M. BERNHEIM, Baltimore.
Discussion to be opened by GEORGE I. MILLER, Brooklyn, and RICHARD LEWISOHN, New York.
26. The Resection of Lobes of the Lung.
SAMUEL ROBINSON, Rochester, Minn.
Discussion to be opened by HOWARD LILIENTHAL, New York.

JOINT MEETING WITH SECTION ON PATHOLOGY AND PHYSIOLOGY

27. Anesthesia in the Curriculum and Clinic.
WILLIS D. GATCH, Indianapolis.
Discussion to be opened by ARTHUR DEAN BEVAN, Chicago.
28. Pathologic Pulmonary Changes from Endotracheal Insufflation Anesthesia in Experimental Lung Surgery (Lantern Demonstration).
CONRAD GEORG, JR., Ann Arbor, Mich.
Discussion to be opened by WILLY MEYER and CHARLES H. PECK, New York.
29. Shock During General Anesthesia.
FRANK C. MANN, Rochester, Minn.
Discussion to be opened by J. FRANK CORBETT, Minneapolis.
30. Toxic Factors of Some of the Common Anesthetic Substances. EVARTS A. GRAHAM, Mason City, Iowa.
Discussion to be opened by JAMES J. HOGAN, Vallejo, Calif.

SECTION ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY

MEETS IN ASTOR GALLERY, WALDORF-ASTORIA

OFFICERS OF SECTION

Chairman—H. W. LONGYEAR, Detroit.
Vice Chairman—HOWARD C. TAYLOR, New York.
Secretary—BROOKE M. ANSPACH, Philadelphia.
Executive Committee—E. GUSTAV ZINKE, Cincinnati; THOMAS S. CULLEN, Baltimore; EDWARD REYNOLDS, Boston.
(Stenographer—MISS LIDIE C. ALEXANDER, Philadelphia)

Wednesday, June 6—9 a. m.

1. Chairman's Address: The Relations of the Gynecologist to the General Surgeon, Past and Present.
HOWARD W. LONGYEAR, Detroit.
2. Preparation of Anemic Patients for Operation.
STUART MCGUIRE, Richmond, Va.
Discussion to be opened by SIDNEY A. CHALFANT, Pittsburgh.
3. The Pathologic and Clinical Significance of Chronic Endocervicitis (Lantern Demonstration).
ARNOLD STURMDORF, New York.
Discussion to be opened by THOMAS S. CULLEN, Baltimore.
4. Why the Menstrual Function Should be Preserved in Double Suppurative Disease of the Tubes.
JOHN OSBORN POLAK, Brooklyn.
Discussion to be opened by GEORGE H. NOBLE, Atlanta, Ga.

JOINT MEETING WITH THE SECTION ON NERVOUS AND MENTAL DISEASES

5. Influence of Labor on the Brain Development of the Child.
ARTHUR STEIN, New York.
Discussion to be opened by FREDERICK PETERSON, New York; CHARLES K. MILLS, Philadelphia; EDWIN B. CRAGIN, New York, and EDWARD P. DAVIS, Philadelphia.

Wednesday, June 6—2 p. m.

6. The Value of Blood Pressure Estimations in the Practice of Obstetrics. J. MORRIS SLEMONS, New Haven, Conn.
Discussion to be opened by F. ASHLEY FAUGHT, Philadelphia.
7. Has the New Born Child with Sutured Cord a Better Start in Life? Comparative Study of 500 Cases.
FREDERICK J. TAUSSIG, St. Louis.
Discussion to be opened by ROBERT L. DICKINSON, Brooklyn.
8. The Sacro-Iliac Joints in Obstetrics and Gynecology.
JENNINGS C. LITZENBERG, Minneapolis.
Discussion to be opened by JOEL E. GOLDTHWAIT, Boston.
9. Cesarean Section Scars: A Histologic Study of Four Specimens (Lantern Demonstration).
ALFRED B. SPALDING, San Francisco.
Discussion to be opened by JAMES A. HARRAR, New York, and NATHANIEL R. MASON, Boston.
10. Premature Separation of the Normally Implanted Placenta.
ARTHUR H. MORSE, New Haven, Conn.
Discussion to be opened by JAMES W. MARKOE, New York.
11. Ectopic Gestation (Lantern Demonstration).
LOUIS J. LADINSKI, New York.
Discussion to be opened by E. GUSTAV ZINKE, Cincinnati.

Thursday, June 7—9 a. m.

12. Prolapse of the Female Urethra (Lantern Demonstration).
JOHN W. KEEFE, Providence, R. I.
Discussion to be opened by EDWARD A. SCHUMANN, Philadelphia.
13. Further Notes on a Rare Type of Bladder Ulcer, with Report of Eighteen Cases.
GUY L. HUNNER and GEORGE L. STICKNEY, Baltimore.
Discussion to be opened by FLOYD E. KEENE, Philadelphia, and WILLIAM F. BRAASCH, Rochester, Minn.
14. Ureterotubal and Uretero-Uterine Anastomosis.
AXEL F. W. WERELIUS, Chicago.
Discussion to be opened by FRANKLIN H. MARTIN, Chicago, and EDWARD S. JUDD, Rochester, Minn.
15. Ovarian Organotherapy: A Preliminary Report.
WILLIAM P. GRAVES, Boston.
Discussion to be opened by ROBERT T. FRANK, New York.
16. Appendicitis and the Gynecologist.
ROBERT T. MORRIS, New York.
Discussion to be opened by LOUIS S. MCMURTRY, Louisville, Ky.
17. Technic and Scope of Local Anesthesia in Abdominal Surgery. ROBERT E. FARR, Minneapolis.
Discussion to be opened by CHARLES F. NASSAU, Philadelphia, and URBAN MAES, New Orleans.

Thursday, June 7—2 p. m.

Election of Officers

18. Causes of Recurrence After Operations on the Bile Passages. DANIEL N. EISENDRATH, Chicago.
Discussion to be opened by W. WAYNE BABCOCK, Philadelphia.
19. Cholecystostomy Versus Cholecystectomy.
MILES F. PORTER, Fort Wayne, Ind.
Discussion to be opened by JOHN G. CLARK, Philadelphia.
20. Acute Pancreatitis. JOHN B. DEAVER, Philadelphia.
Discussion to be opened by RUSSELL S. FOWLER, Brooklyn.
21. Physiologic Colectomy. CHARLES A. L. REED, Cincinnati.
Discussion to be opened by WILLARD BARTLETT, St. Louis.
22. Diverticulitis of the Large Intestine.
WILLIAM J. MAYO, Rochester, Minn.
Discussion to be opened by GEORGE D. STEWART, New York, and CHARLES H. FRAZIER, Philadelphia.
23. Personal Experience in the Surgical Treatment of Intestinal Stasis. J. SHELTON HORSLEY, Richmond, Va.
Discussion to be opened by JOHN W. DRAPER, New York.

Friday, June 8—9 a. m.

24. Blood Studies and Other Preoperative Safeguards in Abdominal Surgery. LOUIS FRANK, Louisville, Ky.
Discussion to be opened by EDWARD B. KRUMBHAAR, Philadelphia.
25. When Is Cancer Operable?
J. WALTER VAUGHAN, Detroit.
Discussion to be opened by DAVID RIESMAN, Philadelphia.
26. The End-Results of the Treatment of Inoperable Uterine Cancer by Heat. JAMES F. PERCY, Galesburg, Ill.
Discussion to be opened by HERMAN J. BOLDT, New York.
27. The Present Status of Radium Therapy in Diseases of Women. HENRY SCHMITZ, Chicago.
Discussion to be opened by CURTIS F. BURNAM, Baltimore.
28. Prolapsus Uteri and Its Treatment.
ABRAHAM J. RONGY, New York.
Discussion to be opened by ALEXIS V. MOSCHCOWITZ, New York.

SECTION ON OPHTHALMOLOGY

MEETS IN NORTH BALL ROOM, HOTEL ASTOR

OFFICERS OF SECTION

Chairman—WILLIAM ZENTMAYER, Philadelphia.

Vice Chairman—CASSIUS D. WESCOTT, Chicago.

Secretary—GEORGE S. DERBY, Boston.

Executive Committee—FRANK C. TODD, Minneapolis; EDWARD C. ELLETT, Memphis, Tenn.; WALTER R. PARKER, Detroit.

(Stenographer—Dr. JOSEPH B. CHAMPION, Chicago)

Members are reminded that the meetings of the section will be called to order promptly on the hour scheduled for opening.

The formal reading of the papers will be omitted, as reprints of the papers on the program have already been delivered to members of the section.

Each essayist will be given ten minutes in which to summarize the points in his paper and introduce the discussion, and five minutes in which to close the discussion.

The member appointed to open the discussion of any paper will be allowed ten minutes. Subsequent speakers will be limited to five minutes.

The papers and all discussions will be printed and bound, forming the Transactions of the Section on Ophthalmology for 1917. Copies of the Transactions may be obtained at $1 each, if subscriptions are sent to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 535 North Dearborn Street, Chicago, by July 1, as only enough copies are printed to cover subscriptions received up to the time of going to press.

Members of the section are requested to register in the section registration book at the entrance. The full name and complete postoffice address should be written plainly.

Wednesday, June 6—9 a. m.

1. Chairman's Address. WILLIAM ZENTMAYER, Philadelphia.
2. Some Observations Which Seem to Lend Support to a Long Discarded Theory of the Chief Function of the Oblique Muscles of the Eye.
SAMUEL THEOBALD, Baltimore.
Discussion to be opened by GILES C. SAVAGE, Nashville, Tenn.
3. Binocular Single Vision: Leaving Out the Consideration of the Color Perception and the Problems of Strabismus.
EDMOND E. BLAAUW, Buffalo.
Discussion to be opened by WALTER B. LANCASTER, Boston.
4. The Treatment of Hypopyon Keratitis.
FREDERICK H. VERHOEFF, Boston.
Discussion to be opened by WILLIAM C. POSEY, Philadelphia.
5. Further Study of the Effects of Heat on the Eye.
WILLIAM E. SHAHAN, St. Louis.
Discussion to be opened by EDGAR S. THOMSON, New York.
6. Crystalline Deposits in the Eye.
F. PARK LEWIS, Buffalo.
Discussion to be opened by BURTON CHANCE, Philadelphia.

Wednesday, June 6—2 p. m.

EXHIBITION OF NEW INSTRUMENTS AND APPLIANCES

7. The Anaphylactic Basis of Sympathetic Ophthalmia: An Experimental Study. ALAN C. WOODS, Philadelphia
Discussion to be opened by GEORGE E. DE SCHWEINITZ, Philadelphia.

8. Oxycephalia: Report of Three Cases, with Operation in One. ARTHUR J. BEDELL, Albany, N. Y.
Discussion to be opened by HARRY FRIEDENWALD, Baltimore.
9. The Endonasal Operation on the Lacrimal Sac.
WILLIAM B. CHAMBERLIN, Cleveland.
Discussion to be opened by HARRIS P. MOSHER, Boston.
10. Neurologic Perimetry and a Method of Imitating Daylight with Electrical Illumination (Lantern Demonstration). CLIFFORD B. WALKER, Boston.
Discussion to be opened by LUTHER C. PETER, Philadelphia.
11. Demonstration of Pathologic Changes in the Optic Nerve in Cases of Artificially Induced Intracranial Pressure.
WALTER R. PARKER, Detroit.

Thursday, June 7—9 a. m.

Election of Officers

12. Conical Cornea or Anterior Myopia.
EDWARD JACKSON, Denver.
Discussion to be opened by SAMUEL D. RISLEY, Philadelphia.
13. A New Operative Method for the Relief of Advanced Cases of Keratoconus, with Report of Two Cases.
MEYER WIENER, St. Louis.
Discussion to be opened by EDWARD C. ELLETT, Memphis, Tenn.
14. Observations on Hereditary Syphilis in Patients with Interstitial Keratitis. ABNER POST, Boston.
Discussion to be opened by JOHN A. FORDYCE, New York.
15. Interstitial Keratitis, with Special Reference to the End-Result. GEORGE S. DERBY, Boston.
Discussion to be opened by ARNOLD KNAPP, New York.
16. Present Status of Corneal Transplantation and Experimental Data. SYDNEY WALKER, JR., Chicago.
Discussion to be opened by JOHN E. WEEKS, New York.

Thursday, June 7—2 p. m.

17. Tendon Shortening.
HENRY H. BRIGGS, Asheville, N. C.
Discussion to be opened by WILL WALTER, Evanston, Ill.
18. Tendon Transplantation of the Eye Muscles.
HARRY W. WOODRUFF, Joliet, Ill.
Discussion to be opened by FRANK C. TODD, Minneapolis.
19. Lymphatic Nodular Keratoconjunctivitis (Phlyctenules).
LEO J. GOLDBACH, Baltimore.
Discussion to be opened by THOMAS B. HOLLOWAY, Philadelphia.
20. The Pathogenesis of Ophthalmia Eczematosa: A Preliminary Report. MICHAEL GOLDENBURG, Chicago.
Discussion to be opened by RICHARD J. TIVNEN, Chicago.
21. An Analysis of 146 Consecutive Cases of Intracapsular Extraction of Senile Cataract.
AARON S. GREEN and LOUIS D. GREEN, San Francisco.
Discussion to be opened by HOWARD F. HANSELL, Philadelphia.

SECTION ON LARYNGOLOGY, OTOLOGY AND RHINOLOGY

MEETS IN EAST BALL ROOM, HOTEL ASTOR

OFFICERS OF SECTION

Chairman—FRANCIS P. EMERSON, Boston.
Vice Chairman—GREENFIELD SLUDER, St. Louis.
Secretary—L. W. DEAN, Iowa City, Iowa.
Executive Committee—BURT R. SHURLY, Detroit; NORVAL M. PIERCE, Chicago; HILL HASTINGS, Los Angeles.
(Stenographer—Miss F. E. DILLAN, Indianapolis)

Wednesday, June 6—9 a. m.

1. Chairman's Address. FRANCIS P. EMERSON, Boston.
2. The Etiology of Foreign Bodies in the Larynx, Trachea, Bronchi and Esophagus (Lantern Demonstration).
CHEVALIER JACKSON, Philadelphia.
Discussion to be opened by HARRIS P. MOSHER, Boston.
3. Peroral Endoscopy in the Diagnosis and Treatment of Diseased Conditions of the Respiratory and Upper Digestive Tracts.
HUBERT ARROWSMITH, Brooklyn.
Discussion to be opened by SAMUEL IGLAUER, Cincinnati.
4. Diseases of the Tongue (Lantern Demonstration).
ROBERT LEVY, Denver.
Discussion to be opened by WILLIAM E. SAUER, St. Louis.
5. The Surgery of the Tongue (Lantern Demonstration).
JOSEPH C. BECK, Chicago.
Discussion to be opened by LEONARD FREEMAN, Denver.

Wednesday, June 6—2 p. m.

6. Indications for the Mastoid Operation in Acute Otitis Media. EDWARD B. DENCH, New York.
Discussion to be opened by JOHN F. BARNHILL, Indianapolis.
7. Pathologic Conditions of the Nose, Epipharynx and Pharynx as Etiologic Factors in Aural Disease.
NORVAL H. PIERCE, Chicago.
Discussion to be opened by GEORGE W. MACKENZIE, Philadelphia.
8. Indications for the Radical Mastoid Operation.
CULLEN F. WELTY, San Francisco.
Discussion to be opened by JACQUES HOLINGER, Chicago.
9. Hemilaryngectomy and Total Laryngectomy (Lantern Demonstration). JOHN E. MACKENTY, New York.
Discussion to be opened by D. CROSBY GREENE, Boston.
10. Treatment of Acute Pulmonary Abscess.
CHARLES W. RICHARDSON, Washington, D. C.
Discussion to be opened by GEORGE F. COTT, Buffalo.
11. Sudden and Profound Loss of Hearing: Its Significance.
OTTO J. STEIN, Chicago.
Discussion to be opened by D. HAROLD WALKER, Boston.

Thursday, June 7—9 a. m.

Reports of Section Committees

12. A Surgical Consideration of the Upper Paranasal Cells.
GREENFIELD SLUDER, St. Louis.
Discussion to be opened by H. HOLBROOK CURTIS, New York.
13. Vertigo as a Symptom of Primary Disease of the Labyrinth. GEORGE E. SHAMBAUGH, Chicago.
Discussion to be opened by ARTHUR B. DUEL, New York.
14. Aural Vertigo Occurring in Suppurative Disease of the Ear. PHILIP D. KERRISON, New York.
Discussion to be opened by HANAU W. LOEB, St. Louis.
15. Vertigo in Intracranial Disease.
THEODORE H. WEISENBURG, Philadelphia.
Discussion to be opened by WELLS P. EAGLETON, Newark.
16. Diagnosis of Vertigo, From Whatever Cause, by Ear Tests (Lantern Demonstration).
ISAAC H. JONES, Philadelphia.
Discussion to be opened by ISIDORE FRIESNER, New York.

Thursday, June 7—2 p. m.

Election of Officers

17. The Science of Musical Sounds.
DAYTON C. MILLER, Cleveland.
18. The Hearing Test From a Practical Standpoint.
GEORGE L. RICHARDS, Fall River, Mass.
Discussion to be opened by WILLIAM B. CHAMBERLIN, Cleveland.
19. Otolaryngology at War Hospitals.
J. GORDON WILSON, Chicago.
Discussion to be opened by HARRIS P. MOSHER, Boston.
20. Tuberculosis of the Upper Respiratory Tract, with Remarks on Pathology and Treatment.
BURT R. SHURLY, Detroit.
Discussion to be opened by THOMAS E. CARMODY, Denver.

Friday, June 8—9 a. m.

21. The End Results in the Treatment of Ozena by Means of Vaccine (Lantern Demonstration).
HENRY W. HORN, San Francisco.
Discussion to be opened by J. G. DWYER, New York, and THOMAS J. HARRIS, New York.
22. The Diagnosis and Treatment of Sinusitis in Infants.
ROSS H. SKILLERN, Philadelphia.
Discussion to be opened by ALBERT H. BEIFELD, Iowa City, Iowa.
23. Simplicity of Technic in Submucous Resection of the Septum (Lantern Demonstration).
LEWIS FISHER, Philadelphia.
Discussion to be opened by EUGENE R. LEWIS, Dubuque, Iowa.

24. Disturbances of Voice Following Tonsillectomy: Their Causes and Prevention (Lantern Demonstration).
ELMER L. KENYON, Chicago.
Discussion to be opened by J. A. STUCKY, Lexington, Ky.
25. The Diagnosis of Tuberculous Laryngitis (Lantern Demstration). JULIUS DWORETZKY, Otisville, N. Y.
Discussion to be opened by FRANK R. SPENCER, Boulder, Colo.

SECTION ON DISEASES OF CHILDREN

MEETS IN WINTER GARDEN, HOTEL MC ALPIN

OFFICERS OF SECTION

Chairman—J. P. SEDGWICK, Minneapolis.
Vice Chairman—FRANK C. NEFF, Kansas City, Mo.
Secretary—F. P. GENGENBACH, Denver.
Executive Committee—FRANK S. CHURCHILL, Chicago; LAWRENCE T. ROYSTER, Norfolk, Va.; T. C. MCCLEAVE, Oakland, Calif.
(Stenographer—DR. HELEN J. COWIE, Philadelphia)

Wednesday, June 6—9 a. m.

1. Chairman's Address: The Institution, Reestablishment and Maintenance of Breast Feeding.
JULIUS P. SEDGWICK, Minneapolis.
2. The Technic of Wet Nurse Management in Institutions.
ISAAC A. ABT, Chicago.
3. Problems Connected with the Production and Collection of Human Milk. BERT R. HOOBLER, Detroit.
4. The Use of Lactic Bacilli Milk.
HARRY M. MCCLANAHAN, Omaha.
5. The Familial Tendency to Fat Incapacity in Infancy and Childhood. THOMAS S. SOUTHWORTH, New York.

Wednesday, June 8—2 p. m.

6. Observations on the Presence of the Bacillus Abortus in Certified Milk.
K. F. MEYER and E. C. FLEISCHNER, San Francisco.
7. Rumination in the First Year of Life.
CLIFFORD G. GRULEE, Chicago.
8. The Effect of Body Posture on the Position and Emptying Time of the Stomach.
LAWRENCE R. DEBUYS and ADOLPH HENRIQUES, New Orleans.
9. Recent Literature Pertaining to Vitamins: Their Application in Infant Feeding. LOUIS FISCHER, New York.
10. A Study of Diarrheal Conditions Found in California, Especially San Francisco, and a Comparison of Such Conditions in California and on the Atlantic Seacoast.
WILLIAM P. LUCAS, San Francisco.
11. Chronic Intestinal Indigestion.
JOHN HOWLAND, Baltimore.

Thursday, June 7—9 a. m.

12. Intubation of Larynx. HENRY J. CARTIN, Johnstown, Pa.
13. The Weight of Clothing in the First Five Years of Life.
J. P. CROZER GRIFFITH, Philadelphia.
14. Edebohls' Operation in Nephritis in Childhood.
JOHN LOVETT MORSE, Boston.
15. Diagnosis of the Age of the Fetus by Roentgenograms.
JULIUS H. HESS, Chicago.
16. Phenolsulphonephthalein Elimination in Infants and Children.
ALBERT GRAEME MITCHELL and J. CLAXTON GITTINGS, Philadelphia.
17. The Prophylactic Use of Pertussis Vaccine, Controlled by the Complement Fixation Test.
EDGAR J. HUENEKENS, Minneapolis.

Thursday, June 7—2 p. m.

Election of Officers

18. A Series of Trophoneuroses Probably Due to Infection.
ALBERT H. BEIFELD, Iowa City, Iowa.
19. Study of Urinary Infections in Children.
RICHARD M. SMITH, Boston.
20. Experimental Pyelitis in the Rabbit.
HENRY F. HELMHOLZ, Evanston, Ill.
21. Desensitization in the Treatment of Infantile Eczema.
THOMAS B. COOLEY, Detroit.
22. The Allen Treatment of Diabetes in Children.
CHARLES E. HANSEL, South Bend, Ind.
23. The Method of Determining the Exact Dose of Tuberculin for the Individual Child with Pulmonary Tuberculosis, Whether that Dose Be the Initial or any Subsequent Dose. MYER SOLIS-COHEN, Philadelphia.

Friday, June 8—9 a. m.

JOINT MEETING WITH THE SECTION ON NERVOUS AND MENTAL DISEASES AND THE SECTION ON ORTHOPEDIC SURGERY

SYMPOSIUM ON POLIOMYELITIS

24. Early Diagnosis and Specific Treatment of Poliomyelitis.
GEORGE DRAPER, New York.
25. Treatment of Infantile Paralysis, with Special Reference to Study of New York State Cases.
ROBERT W. LOVETT, Boston.
26. Practical Aspects of the Treatment of Anterior Poliomyelitis. ARMITAGE WHITMAN, New York.
27. Contagiousness of Acute Poliomyelitis.
CHARLES HERRMAN, New York.
28. Results of Present Epidemic of Infantile Paralysis.
HENRY L. K. SHAW, Albany, N. Y.
29. The Hematogenous Invasion of the Cerebrospinal Axis in Poliomyelitis. LASALLE ARCHAMBAULT, Albany, N. Y.
30. Recent Additions to Our Knowledge of Poliomyelitis.
FREDERICK TILNEY, New York.

SECTION ON PHARMACOLOGY AND THERAPEUTICS

MEETS IN THE HOTEL MANHATTAN

OFFICERS OF SECTION

Chairman—ALBION W. HEWLETT, San Francisco.
Vice Chairman—ARTHUR D. HIRSCHFELDER, Minneapolis.
Secretary—CARY EGGLESTON, New York.
Executive Committee—RAY L. WILBUR, San Francisco; J. F. ANDERSON, New Brunswick, N. J.; R. A. HATCHER, New York.
(Stenographer—DR. WARREN STIRLING, Philadelphia)

Wednesday, June 6—9 a. m.

1. Chairman's Address. A. W. HEWLETT, San Francisco.
2. Crucial Test of Therapeutic Evidence.
TORALD SOLLMANN, Cleveland.
3. The Teaching of Pharmacology.
WILLIAM DEB. MACNIDER, Chapel Hill, N. C.
4. A Simple Apparatus for Administration of Oxygen Under Pressure, with Remarks on the Efficiency of the Procedure (Lantern Demonstration).
SAMUEL J. MELTZER, New York.
5. Acidosis in Morphinism. JAMES E. TALLEY, Philadelphia.
6. The Action of Alcohol on the Isolated Mammalian Heart.
CHARLES C. LIEB, New York.

Wednesday, June 6—2 p. m.

7. A Discussion of Certain Measures for the Treatment of Pulmonary Edema in Pneumonia.
WALTER A. BASTEDO, New York.

SYMPOSIUM ON RADIOACTIVE THERAPEUTIC MEASURES

8. The Truth About the Therapeutic Value of Radioactive Methods.
ARTHUR FENWICK HOLDING and WILLIAM BAYARD LONG, New York.
9. The Possibilities and Limitations of Roentgenography in Malignant Diseases.
GEORGE E. PFAHLER, Philadelphia.
10. Review of Cases of Sarcoma of the Throat and Sinuses Treated by Radium and Roentgen Rays.
HENRY K. PANCOAST, Philadelphia.
11. New Growths of the Mediastinum, with Especial Reference to Their Treatment with Radium (Lantern Demonstration). CURTIS F. BURNAM, Baltimore.
12. Heliotherapy in the Treatment of Tuberculosis.
ABRAHAM G. SHORTLE, Albuquerque, N. M.

Thursday, June 7—9 a. m.

Election of Officers

13. Observations on the Excretion of Dyes.
RICHARD WEIL and RUSSELL L. CECIL, New York.
14. Innovations in Intravenous Medication.
WALTON FOREST DUTTON, Tulsa, Okla.

SYMPOSIUM ON VACCINE THERAPY

15. The Nonspecificity of Vaccine Therapy.
JOSEPH L. MILLER, Chicago.
16. Bacterial Vaccine Therapy.
JAMES P. LEAKE, Washington, D. C.
17. Prophylactic Use of Vaccines in the Great War.
NEWTON E. WAYSON, Washington, D. C.

Thursday, June 7—2 p. m.

18. Further Studies on the Development of Edema in Mustard Oil Conjunctivitis.
ARTHUR D. HIRSCHFELDER, Minneapolis.
19. Ethyl Hydrocuprein (Optochin) in the Treatment of Acute Lobar Pneumonia.
HENRY F. MOORE and ALAN M. CHESNEY, New York.
20. A Study of the Eggleston Method of Administering Digitalis.
S. MARX WHITE and R. EDWIN MORRIS, Minneapolis.
21. Influence of Large Doses of Digitalis and Digitoxin on the Blood Pressures in Man.
CARY EGGLESTON, New York.
22. Tyramin as an Adjunct to Morphin in Labor.
HENRY G. BARBOUR, New Haven, Conn.

SECTION ON PATHOLOGY AND PHYSIOLOGY

MEETS IN BLUE ROOM, HOTEL MC ALPIN

OFFICERS OF SECTION

Chairman—JAMES EWING, New York.
Vice Chairman—C. W. GREEN, Columbia, Mo.
Secretary—ISABELLA C. HERB, Chicago.
Executive Committee—WILLIAM OPHULS, San Francisco; A. J. CARLSON, Chicago; F. P. GAY, Berkeley, Calif.
(Stenographer—J. G. BUHLER, New York)

Wednesday, June 6—9 a. m.

1. Chairman's Address. JAMES EWING, New York.
2. The Manner in Which Ossification Occurs in Different Pathologic Processes.
DALLAS B. PHEMISTER, Chicago.
Discussion to be opened by LEON T. LEWALD, New York.
3. Formation of Thrombosis in Veins (Experimental).
ANGUS MCLEAN, Detroit.
Discussion to be opened by RAYMOND C. ANDRIES, Detroit.
4. Pigmentation of the Hind Gut: Its Clinical Significance.
W. LANDEAM MCFARLAND, New York.
Discussion to be opened by L. M. LYNCH and JOHN W. DRAPER, New York.
5. The Colloidal Gold Chlorid Test: the Nature of the Solution and Its Application to Diseases of the Central Nervous System.
J. H. BLACK and R. B. MCBRIDE, Dallas, Tex.
Discussion to be opened by SIDNEY R. MILLER, Baltimore.
6. The Nature of the Syphilitic Antigen.
CARL C. WARDEN, Ann Arbor, Mich.

Wednesday, June 6—2 p. m.

7. A More Delicate Wassermann Reaction Depending on the Use of Larger Quantities of Blood Serum.
P. T. BOHAN and L. A. LYNCH, Kansas City, Mo.
8. A Comparison of the Chemical Findings in Blood and Spinal Fluid, with Special Reference to Urea Nitrogen, Uric Acid, Creatinin, and Sugar.
R. B. H. GRADWOHL, St. Louis.
Discussion to be opened by W. MCKIM MARRIOTT, Boston.
9. The Importance of Diet as a Factor in the Production of Pathologic Changes.
WILLIAM SALANT, Washington, D. C.
Discussion to be opened by ROBERT HATCHER, New York.
10. Intravenous Injections of Aceto-Acetic Acid and l-Beta-Hydroxybutyric Acid at Known Rates.
RUSSELL M. WILDER, Chicago.
11. Some Causes of the Pathology in Diabetes Mellitus.
ALBERT J. HODGSON, Waukesha, Wis.
12. The Relation Between Bile and Phenol Production in the Intestine. HARRY DUBIN, Philadelphia.

Thursday, June 7—9 a. m.

13. The Pathologic Physiology of the Heart as Revealed by the Polygraph and the Electrocardiograph.
LOUIS F. BISHOP, New York.
Discussion to be opened by THOMAS S. LEE, Washington, D. C.
14. A Critique of Banti's Disease.
ELI MOSCHCOWITZ, New York.
15. Immunologic Studies in Poliomyelitis.
EDWARD C. ROSENOW, Rochester, Minn.
16. Ether Therapy in Surgical Infections and Its Effect on Immunity. JOHN SALIBA, Elizabeth City, N. C.
17. Experimental Lesions in the Cervical Sympathetic Ganglia and Thyroids of Goats.
LOUIS B. WILSON, Rochester, Minn.
18. The Etiology and Pathology of Rocky Mountain Spotted Fever. S. B. WOLBACH, Boston.

Thursday, June 7—2 p. m.

Election of Officers

19. The Occurrence of Tubercle Bacilli in the Breast Milk of Tuberculous Women.
FREDERICK COONLEY, New York.
20. Clinical Pathology and Morbid Anatomy of Experimental Trypanosome Anemia.
E. B. KRUMBHAAR and R. M. PEARCE, Philadelphia.
21. An Apparatus for the Study of the Dissociation of Oxyhemoglobin. W. G. MACCALLUM, New York.
22. The Morphologic Appearance of Cancer Clinically Cured by Means of Radium and Roentgen Rays.
ISAAC LEVIN and B. JOSEPH, New York.
Discussion to be opened by HENRY SCHMITZ, Chicago.
23. Study of the Streptothrix Isolated in Two Cases of Rat-Bite Fever. WILLIAM LITTERER, Nashville, Tenn.

Friday, June 8—9 a. m.

JOINT MEETING WITH THE SECTION ON SURGERY, GENERAL AND ABDOMINAL, GRAND BALL ROOM, WALDORF-ASTORIA

24. Anesthesia in the Curriculum and Clinic.
WILLIS D. GATCH, Indianapolis.
Discussion to be opened by ARTHUR DEAN BEVAN, Chicago.
25. Pathologic Pulmonary Changes from Endotracheal Insufflation Anesthesia in Experimental Lung Surgery (Lantern Demonstration).
CONRAD GEORG, JR., Ann Arbor, Mich.
Discussion to be opened by WILLY MEYER and CHARLES H. PECK, New York.
26. Shock During General Anesthesia.
FRANK C. MANN, Rochester, Minn.
Discussion to be opened by J. FRANK CORBETT, Minneapolis.
27. Toxic Factors of Some of the Common Anesthetic Substances. EVARTS A. GRAHAM, Mason City, Iowa.
Discussion to be opened by JAMES J. HOGAN, Vallejo, Calif.
28. Defective Angiogenesis as a Factor in the Production of Primary Renal Aplasia, Hypoplasia and Dysplasia.
W. M. L. COPLIN, Philadelphia.
29. Cerebrospinal Fluid and the Colloidal Gold Chlorid Test.
LLOYD D. FELTON, Baltimore.

SECTION ON STOMATOLOGY

MEETS IN YACHT ROOM, HOTEL ASTOR

OFFICERS OF SECTION

Chairman—ARTHUR D. BLACK, Chicago.
Vice Chairman—HENRY S. DUNNING, New York.
Secretary—EUGENE S. TALBOT, Chicago.
Executive Committee—VIRGIL LOEB, St. Louis; WILLIAM C. FISCHER, New York; FREDERICK B. MOOREHEAD, Chicago.
(Stenographer—WILLIAM SMART, New York)

Wednesday, June 6—9 a. m.

1. Chairman's Address: Roentgenographic and Microscopic Studies of the Tissues Involved in Chronic Mouth Infections. ARTHUR D. BLACK, Chicago.
2. Chronic Diseases of the Mouth of Interest to Both Physician and Dentist (Lantern Demonstration).
KURT H. THOMA, Boston.
3. Cysts of the Dental System.
KATHERINE W. DEWEY, Chicago.

4. A Study of the Infectious Granular Tissue Found at the Apexes of Pulpless Teeth Commonly Called Chronic or Blind Abscesses. HERBERT A. POTTS, Chicago.
5. The Retention of Devitalized Teeth Without Danger of Focal Infection. MEYER L. RHEIN, New York.
Discussion to be opened by HARRY GERMAIN, Boston.

Wednesday, June 6—2 p. m.

Election of Officers

6. Epithelioma or Cancer of the Oral Cavity.
L. DUNCAN BULKLEY, New York.
7. Treatment of Cancer of the Mouth by Electrical Cautery, with or without Operative Measures.
JOHN W. BRANSFIELD and GEORGE M. DORRANCE, Philadelphia.
Discussion to be opened by ALBERT J. OCHSNER, Chicago. and JOSEPH C. BLOODGOOD, Baltimore.
8. Injuries of the Temporomandibular Articulation: Their Diagnosis and Treatment.
HENRY SAGE DUNNING, New York.
9. Tuberculosis of the Tongue.
JOHN W. MEANS and JONATHAN FORMAN, Columbus, Ohio.
10. Preliminary Report of Investigations as to the Frequency of Metastatic Eye Infections from Primary Dental Foci.
JOSEPH M. LEVY, New York.

Thursday, June 7—2 p. m.

11. Bone Surgery as Applied to the Jaws, with Special Reference to Bone Regeneration.
MORRIS I. SCHAMBERG, New York.
12. A Composite Osteoplastic Closure of Clefts of the Hard Palate. JOHN B. ROBERTS, Philadelphia.
13. "Soup Bone" Implants for the Correction of Defects of the Skull and Face.
W. WAYNE BABCOCK, Philadelphia.
Discussion to be opened by ALLEN B. KANAVEL, Chicago, FREDERICK B. MOOREHEAD, Chicago, GEORGE V. I. BROWN, Milwaukee, Wis., and THOMAS L. GILMER, Chicago.
14. A New Operation for the Immediate Surgical Separation of the Superior Maxillary Bones to Widen the Nares for the Improvement of Respiratory and Other Conditions (Lantern Demonstration).
GEORGE V. I. BROWN, Milwaukee, Wis.
Discussion to be opened by JOSEPH S. EVANS, JR., Madison, Wis., GLENFORD L. BELLIS, Wauwatosa, Wis., OTTO H. FOERSTER, Milwaukee, Wis., and D. F. MACMILLAN, Chicago.

SECTION ON NERVOUS AND MENTAL DISEASES

MEETS IN ROOF GARDEN, HOTEL MC ALPIN

OFFICERS OF SECTION

Chairman—BERNARD SACHS, New York.
Vice Chairman—CHARLES W. HITCHCOCK, Detroit.
Secretary—A. S. HAMILTON, Minneapolis.
Executive Committee—HOWELL T. PERSHING, Denver; W. W. GRAVES, St. Louis; FRANCIS X. DERCUM, Philadelphia.
(Stenographer—MISS V. E. BATES, New York)

Wednesday, June 6—9 a. m.

1. Chairman's Address: The Truth About Intraspinous Injections in the Treatment of Syphilis of the Nervous System. BERNARD SACHS, New York.
2. Progress in Psychiatric Teaching.
ADOLF MEYER, Baltimore.
3. State Organization for Mental Hygiene.
OWEN COPP, Philadelphia.

JOINT MEETING WITH THE SECTION ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY, ASTOR GALLERY, WALDORF-ASTORIA

4. Influence of Labor on the Brain Development of the Child. ARTHUR STEIN, New York.
Discussion to be opened by FREDERICK PETERSON, New York; CHARLES K. MILLS, Philadelphia; EDWIN B. CRAGIN, New York, and EDWARD P. DAVIS, Philadelphia.

Wednesday, June 6—2 p. m.

5 Hysterical Lethargy.
DAVID I. WOLFSTEIN, Cincinnati.
6. The Neurasthenic at the Threshold.
FRANCIS R. FRY, St. Louis
7. The Psychoneuroses: How Shall We Look on Them Today? THEODORE DILLER, Pittsburgh.
8. The Medicolegal Problems of the Traumatic Neuroses.
EDWARD E. MAYER, Pittsburgh.
9. Clinical and Pathologic Study of Fifty Cases of Paresis.
LAWSON G. LOWREY, Boston.
10. Psychoses Other than Paretic Dementia in Syphilitic Individuals. ALFRED GORDON, Philadelphia.

Thursday, June 7—9 a. m.

11. The Early Recognition of Multiple Sclerosis, with Report of Twelve Cases. LEO M. CRAFTS, Minneapolis.
12. Charcot-Marie Tooth Type of Progressive Muscular Atrophy. GEORGE WILSON, Philadelphia.
13. Metabolism of Muscular Dystrophy.
SIMON P. GOODHART, New York.
14. Report of a Case of Syringomyelia with Operation: The Difference Between it and Amyotrophic Lateral Sclerosis. EDWARD D. FISHER, New York.
15. A Lack of Correspondence Between Operative Findings and Symptoms in a Series of Neurosurgical Cases.
SIDNEY I. SCHWAB and ERNEST SACHS, St. Louis.
16. Familial Head Nystagmus in Four Generations, Associated with Ocular Nystagmus.
NATHANIEL S. YAWGER, Philadelphia.

Thursday, June 7—2 p. m.

Election of Officers

17. Cerebrospinal Fluid Pressure.
ANDREW L. SKOOG, Kansas City, Mo.
18. Organic Changes in the Central Nervous System Due to Probable Focal Infections.
GEORGE W. HALL, Chicago.
19. Sciatica and Its Treatment.
ISRAEL STRAUSS, New York.
20. Pituitary Disease: Study of 100 Cases.
ISADOR ABRAHAMSON and HYMAN CLIMENKO, New York.
21. The Antipoliomyelitis Hesse Serum.
MARCUS NEUSTAEDTER and E. BANZHAF, New York.
22. Persistent Treatment of Epilepsy.
HOWELL T. PERSHING, Denver.
23. Dystonia. JOHN H. W. RHEIN, Philadelphia.

Friday, June 8—9 a. m.

JOINT MEETING WITH THE SECTION ON DISEASES OF CHILDREN AND THE SECTION ON ORTHOPEDIC SURGERY, WINTER GARDEN, HOTEL MC ALPIN

SYMPOSIUM ON POLIOMYELITIS

24. Early Diagnosis and Specific Treatment of Poliomyelitis.
GEORGE DRAPER, New York.
25. Treatment of Infantile Paralysis, with Special Reference to Study of New York State Cases.
ROBERT W. LOVETT, Boston.
26. Practical Aspects of the Treatment of Anterior Poliomyelitis. ARMITAGE WHITMAN, New York.
27. Contagiousness of Acute Poliomyelitis.
CHARLES HERRMAN, New York.
28. Results of Present Epidemic of Infantile Paralysis.
HENRY L. K. SHAW, Albany, N. Y.
29. The Hematogenous Invasion of the Cerebrospinal Axis in Poliomyelitis.
LASALLE ARCHAMBAULT, Albany, N. Y.
30. Recent Additions to Our Knowledge of Poliomyelitis.
FREDERICK TILNEY, New York.

SECTION ON DERMATOLOGY

MEETS IN ACADEMY OF MEDICINE, DU BOIS HALL

OFFICERS OF SECTION

Chairman—HENRY R. VARNEY, Detroit.
Vice Chairman—FRANK E. SIMPSON, Chicago.
Secretary—HENRY H. HAZEN, Washington, D. C.
Executive Committee—RICHARD L. SUTTON, Kansas City, Mo.; HOWARD FOX, New York; HOWARD MORROW, San Francisco.
(Stenographer—JAMES C. MARRIOTT, New York)

Wednesday, June 6—9 a. m.

1. Chairman's Address: The Hospital Opportunities and Responsibilities for the Syphilitic.
HENRY R. VARNEY, Detroit.

SYMPOSIUM ON THE ECONOMIC IMPORTANCE AND TEACHING OF SYPHILIS

2. The Economic Importance of Syphilis.
MAJOR HENRY J. NICHOLS, Fort Bliss, Texas, and MAJOR MATHEW A. REASONER, Washington, D. C.
3. The Teaching of Syphilis. JOHN A. FORDYCE, New York.
4. The Teaching of Syphilis. C. MORTON SMITH, Boston.
5. The Teaching of Syphilis.
WALTER J. HEIMANN, New York.

Discussion on Syphilis to be opened by WILLIAM T. CORLETT, Cleveland; HARRY G. IRVINE, Minneapolis, and UDO J. WILE, Ann Arbor, Mich.

6. A Study of the Manner in Which Mercury is Absorbed When Administered by Inunction.
JAY FRANK SCHAMBERG, JOHN A. KOLMER and GEORGE W. RAIZISS, Philadelphia.

Wednesday, June 6—2 p. m.

Election of Officers

SYMPOSIUM ON NEOPLASMS

7. Mycosis Fungoides: A Study of Seven Cases.
J. FRANK FRASER, New York.
8. The Skin Changes in Hodgkin's Disease.
HAROLD N. COLE, Cleveland.
9. Lymphadenosis Cutis Universalis, Associated with Generalized Erythrodermia and Atrophy of the Skin.
FRED WISE, New York.
10. An Analysis of Forty-One Cases of Skin Cancer.
SAMUEL E. SWEITZER, Minneapolis.
11. Primary Nonpigmented Sarcoma of the Skin.
JOSEPH ZEISLER and ERWIN PAUL ZEISLER, Chicago.

Discussion on Neoplasms to be opened by RICHARD L. SUTTON, Kansas City, Mo., and HENRY H. HAZEN, Washington, D. C.

12. Clinical Considerations on Epidermolysis Bullosa.
A. RAVOGLI, Cincinnati.

Thursday, June 7—9 a. m.

13. The Treatment of Impetigo Contagiosa.
HOWARD MORROW, San Francisco.

Discussion to be opened by MICHAEL L. RAVITCH, Louisville, Ky.

14. Ringed Hairs: A Study.
FRANK CROZER KNOWLES, Philadelphia.
15. Papulonecrotic Pernio of the Auricle.
ARTHUR J. MARKLEY, Denver.
16. Argyria Localis Due to Organic Silver Preparations.
GEORGE MANGHILL OLSON, Minneapolis.
17. Primrose Dermatitis: Its Relationship to Anaphylaxis.
C. AUGUSTUS SIMPSON, Washington, D. C.
18. Perleche. JOHN E. LANE, New Haven, Conn.

SECTION ON PREVENTIVE MEDICINE AND PUBLIC HEALTH

MEETS IN THE MUSIC ROOM, HOTEL BILTMORE

OFFICERS OF SECTION

Chairman—OTTO P. GEIER, Cincinnati.

Vice Chairman—ERNEST C. LEVY, Richmond, Va.

Secretary—A. M. HARVEY, Chicago.

Executive Committee—M. P. RAVENEL, Columbia, Mo.; C. HAMPSON JONES, Baltimore; WILLIAM C. RUCKER, Washington, D. C.

(Stenographer—GEORGE B. COCK, Philadelphia)

Wednesday, June 6—9 a. m.

1. Chairman's Address: Adequate Medical Service of the Future. OTTO P. GEIER, Cincinnati.

Discussion to be opened by FREDERICK R. GREEN, Chicago, and LEE K. FRANKEL, New York.

2. The New Public Health.
W. S. RANKIN, Raleigh, N. C.

Discussion to be opened by W. C. WOODWARD, Washington, D. C., and HENRY BRACKEN, St. Paul.

3. The Diagnostic Clinic as a Factor in Higher Standards of Medical Practice. DAVID L. EDSALL, Boston.

Discussion to be opened by ERNEST C. LEVY, Richmond, Va., RODGER S. MORRIS, Cincinnati, and ROBERT POLLOCK, San Diego, Calif.

4. The Industrial Dispensary as a Contribution to Public Health. SIDNEY M. MCCURDY, Youngstown, Ohio.

Discussion to be opened by HARRY E. MOCK, Chicago; MILTON J. ROSENAU, Boston, and GEORGE M. KOBER, Washington, D. C.

5. The All-Day School Dispensary in the Prevention of Disease. JOHN NEWELL HURTY, Indianapolis.

Discussion to be opened by L. EMMETT HOLT, New York, and TALIAFERRO CLARK, Washington, D. C.

Wednesday, June 6—2 p. m.

6. The Need for Compulsory Health Insurance.
PROF. IRVING FISHER, New Haven, Conn.

Discussion to be opened by RALPH S. CONE, Westwood, N. J., and S. S. GOLDWATER, New York.

7. Facts and Fallacies of Compulsory Sickness Insurance.
MR. FREDERICK L. HOFFMAN, Newark, N. J.

Discussion to be opened by EDEN V. DELPHEY, New York, and WILBER E. POST, Chicago.

8. The Industrial Aspect.
MR. M. W. ALEXANDER, West Lynn, Mass.

Discussion to be opened by I. M. RUBINOW, New York; WALTER CANNON, Boston, and ALICE HAMILTON, Chicago.

9. Organized Labor's Position.
MR. GRANT HAMILTON, Washington, D. C.

Discussion to be opened by MR. MILES M. DAWSON and SAMUEL JOSEPH KOPETZKY, New York.

10. The Medical Aspect.
ALEXANDER LAMBERT, New York.

Discussion to be opened by W. D. CHAPMAN, Silvis, Ill.

Thursday, June 7—9 a. m.

Election of Officers

11. Compulsory Military Service as a Factor in Public Health.
MAJOR GENERAL LEONARD WOOD, Washington, D. C.

Discussion to be opened by GUY L. KIEFER, Detroit, and W. C. RUCKER, Washington, D. C.

12. Preparations for Public Health During War.
FRANKLIN H. MARTIN, Chicago.

Discussion to be opened by H. E. DEARHOLT, Milwaukee, Wis.

13. The Protection of the Health of the Worker in War.
W. IRVING CLARK, JR., Worcester, Mass.

Discussion to be opened by T. R. CROWDER, Chicago, and G. W. SCHERESCHEWSKY, Pittsburgh.

14. The Sanitary Success Attained During the Mobilization Along the Mexican Border in 1916.
W. P. CHAMBERLAIN, Fort Banks, Mass.

Discussion to be opened by C. ST. CLAIR DRAKE, Springfield, Ill.

15. The Medical Student as a Medicomilitary Cadet.
H. C. COE, New York.

Discussion to be opened by FRANCIS E. FRONCZAK, Buffalo.

16. Epidemiologic Study of a Measles Outbreak in the Border Army. E. L. MUNSON, San Antonio, Tex.

Discussion to be opened by B. FRANKLIN ROYER, Harrisburg, Pa.

Thursday, June 7—2 p. m.

17. Some Aspects of the Public Health in China.
W. W. PETER, Shanghai, China.

Discussion to be opened by W. A. EVANS, Chicago.

18. Community Health and Tuberculosis Demonstration.
A. B. ARMSTRONG, Framingham, Mass.

Discussion to be opened by S. ADOLPHUS KNOPF, New York.

19. Prophylactic Therapy of Rickets in a Negro Community.
A. F. HESS, New York.

Discussion to be opened by J. H. MASON KNOX, Baltimore.

20. A Discussion of the Cause of the Occasional Failure of Typhoid Vaccine to Immunize.
JOHN A. ROBISON, Chicago.

21. Personal Observations as to Trench Prophylaxis.
R. W. CORWIN, Pueblo, Colo.

Discussion to be opened by W. O. SHERMAN, Pittsburgh.

22. The Place of Infant Welfare in an Institution of Hygiene.
J. H. MASON KNOX, Baltimore.

SECTION ON GENITO-URINARY DISEASES

MEETS IN GREEN ROOM, WALDORF-ASTORIA

OFFICERS OF SECTION

Chairman—HUGH CABOT, Boston.
Vice Chairman—CARL WHEELER, Lexington, Ky.
Secretary—WILLIAM F. BRAASCH, Rochester, Minn.
Executive Committee—ARTHUR L. CHUTE, Boston; GRANVILLE MACGOWAN, Los Angeles; LOUIS E. SCHMIDT, Chicago.
(Stenographer—DR. WILLIAM G. YOUNG, Washington, D. C.)

Wednesday, June 6—2 p. m.

1. Treatment of Chancroids.
FREDERICK W. ROBBINS and FRANK C. SEABURY, Detroit.
Discussion to be opened by NOAH E. ARONSTAM, Detroit.
2. Clinical Considerations of Verumontanum Diseases Based on Histopathology. ANTON G. RYTINA, Baltimore.
Discussion to be opened by ALEXANDER RANDALL, Philadelphia.
3. External Urethrotomy and Seminal Vesiculotomy Combined in a Single Operative Procedure.
EUGENE FULLER, New York.
Discussion to be opened by HUGH H. YOUNG, Baltimore.
4. Certain Forms of Vesical Abscess of Extravesical Origin.
LOUIS E. SCHMIDT, Chicago.
5. The Significance of Tubercle Bacilli in the Urine.
WILLIAM M. SPITZER, WILLIAM W. WILLIAMS and WARD T. BURDICK, Denver.
Discussion to be opened by THOMAS W. HASTINGS, New York.
6. Genito-Urinary Moving Pictures.
EDGAR G. BALLENGER, Atlanta, Ga.

Thursday, June 7—9 a. m.

7. Bladder Disturbances Due to Nerve Lesions.
GEORGE G. SMITH, Boston.
Discussion to be opened by JOHN R. CAULK, St. Louis, and WILLIAM C. QUINBY, Boston.
8. Vesical Diverticula: Operation in Two Cases, with Remarks on Technic. BRANSFORD LEWIS, St. Louis.
Discussion to be opened by WILLIAM E. LOWER, Cleveland.
9. Syphilis of the Bladder.
HARRY A. FOWLER, Washington, D. C.
Discussion to be opened by EDWARD L. KEYES, JR., New York.
10. A Study of the Results of Treatment of Various Types of Bladder Tumors. JOHN T. GERAGHTY, Baltimore.
Discussion to be opened by WILLIAM F. BRAASCH, Rochester, Minn.
11. Cystectomy as a Method of Treatment in Certain Types of Malignant Tumors of the Bladder.
WILLIAM E. LOWER, Cleveland.
Discussion to be opened by J. BENTLEY SQUIER, New York.
12. Radium Treatment of Bladder and Prostatic Carcinoma.
BENJAMIN S. BARRINGER, New York.
Discussion to be opened by EDWARD L. KEYES, JR., New York.

Thursday, June 7—2 p. m.

Election of Officers

SYMPOSIUM ON ROENTGENOGRAPHIC AND CLINICAL DIAGNOSIS OF LITHIASIS IN THE URINARY TRACT

13. Improved Technic for Radical Excision of Carcinoma of Prostate and Seminal Vesicles.
HUGH H. YOUNG, Baltimore.
14. Review of a Series of Roentgenographic Examinations of the Urinary Tract.
EUGENE W. CALDWELL, New York.
15. The Differential Diagnosis of Ureteral Calculi from Concretions in the Appendix and Other Lesions Associated with Roentgen Shadows.
LEON T. LEWALD, New York.
16. Roentgen Diagnosis of Renal Calculi.
ALEXANDER B. MOORE, Rochester, Minn.
17. Roentgenographic Diagnosis of Lithiasis in the Urinary Tract. PERCY E. BROWN, Boston.
18. The Clinical Diagnosis of Lithiasis of the Upper Urinary Tract. EDWARD L. YOUNG, JR., Boston.
19. Clinical Diagnosis of Lithiasis.
HENRY G. BUGBEE, New York.
Discussion on Roentgenographic Diagnosis of Lithiasis to be opened by FREDERICK H. BAETJER, Baltimore; HENRY K. PANCOAST, Philadelphia; J. BENTLEY SQUIER, New York, and WILLIAM F. BRAASCH, Rochester, Minn.

Friday, June 8—9 a. m.

20. The Intravenous Phlorizin Test.
MARTIN KROTOSZYNER and WILLIAM E. STEVENS, San Francisco.
Discussion to be opened by ROBERT H. GREENE, New York.
21. Comparative Results of a Number of Functional Kidney Tests on a Series of Patients.
BENJAMIN A. THOMAS and JOSEPH C. BIRDSALL, Philadelphia.
Discussion to be opened by STEPHEN E. TRACY, Philadelphia.
22. The Value of Making a Routine Leukocyte Count on the Urine in Infections of the Higher Urinary Tract (Lantern Demonstration).
HERMAN L. KRETSCHMER, Chicago.
Discussion to be opened by LOUIS E. SCHMIDT, Chicago.
23. Surgical Diseases of the Urinary Tract in Children.
ABRAHAM HYMAN, New York.
Discussion to be opened by LEO BUERGER, New York.
24. The Relationship of Pain to Renal Calculus.
FERDINAND C. WALSH, San Antonio, Texas.
Discussion to be opened by J. BENTLEY SQUIER, New York.
25. Polycystic Kidney.
CHARLES E. BARNETT, Fort Wayne, Ind.
Discussion to be opened by ROBERT C. BRYAN, Richmond, Va.

SECTION ON ORTHOPEDIC SURGERY

MEETS IN ASSEMBLY HALL, WALDORF-ASTORIA

OFFICERS OF SECTION

Chairman—E. W. RYERSON, Chicago.
Vice Chairman—ROBERT B. OSGOOD, Boston.
Secretary—EMIL S. GEIST, Minneapolis.
Executive Committee—LEONARD W. ELY, San Francisco; NATHANIEL ALLISON, St. Louis; RUSSELL A. HIBBS, New York. (Stenographer—MISS LULU GAY, Philadelphia)

Wednesday, June 6—9 a. m.

1. Chairman's Address The Care of Cripples as a Problem for Each Individual State.
EDWIN W. RYERSON, Chicago.
2. Treated and Untreated Osteochondritis of the Hip.
WALLACE BLANCHARD, Chicago.
Discussion to be opened by AUGUSTUS THORNDIKE, Boston, and JAMES T. RUGH, Philadelphia.
3. Neurotization of Paralyzed Muscle: a Clinical and Laboratory Study (Lantern Demonstration).
JOHN JOSEPH NUTT, New York.
Discussion to be opened by ALEXANDER FRASER, New York, and ARTHUR STEINDLER, Iowa City, Iowa.
4. The Lame and Stiff Shoulder.
CARL H. BUCHOLZ, Boston.
Discussion to be opened by ROBERT OSGOOD, Boston, and WALTER TRUSLOW, Brooklyn.
5. Arthritis and Foreign Protein.
HENRY B. THOMAS, Chicago.
Discussion to be opened by JOSEPH E. MILLER and WALTER G. STERN, Cleveland.
6. Fractures. HORACE R. ALLEN, Indianapolis.
Discussion to be opened by MAURICE I. ROSENTHAL, Fort Wayne, Ind., and FREDERIC J. COTTON, Boston.

Wednesday, June 6—2 p. m.

7. Study of a Group of 110 Cases of Poliomyelitis, from the Acute Attack to the Present Time.
CHARLES OGILVY, New York.
Discussion to be opened by HENRY LING TAYLOR and CHARLTON WALLACE, New York.
8. The Orthopedic Treatment of Acute and Convalescent Poliomyelitis. E. D. EBRIGHT, Coney Island, N. Y.
Discussion to be opened by WALTER TRUSLOW, Brooklyn, and HENRY B. THOMAS, Chicago.

9. The Treatment of Anterior Poliomyelitis at Fordham Hospital. SAMUEL W. BOORSTEIN, New York.
Discussion to be opened by JOHN L. PORTER, Chicago, and WILLIS C. CAMPBELL, Memphis, Tenn.
10. The Bone Pin Arthrodesis in the Treatment of Flatfoot, Paralytic Valgus, etc. ROBERT E. SOULE, Newark, N. J.
Discussion to be opened by GWILYM G. DAVIS, Philadelphia, and HIRAM W. ORR, Lincoln, Neb.
11. The Treatment of Spinal Deformities Caused by Infantile Paralysis. RUSSELL A. HIBBS, New York.
Discussion to be opened by FRED J. FASSETT, Seattle, and MAYNARD C. HARDING, San Diego, Calif.
12. Correction of Skeletal Defects of Lower Extremities Resulting from Poliomyelitis (Lantern Demonstration). MICHAEL HOKE, Atlanta, Ga.

Thursday, June 7—9 a. m.

13. The Treatment of Scoliosis. FRANK E. PECKHAM, Providence, R. I.
Discussion to be opened by ALBERT H. FREIBERG, Cincinnati, and EDVILLE G. ABBOTT, Portland, Me.
14. The Operative Treatment of Tuberculosis of the Knee Joint in Adults. ROBERT B. OSGOOD, Boston.
Discussion to be opened by MELVIN S. HENDERSON, Rochester, Minn., and FRED H. ALBEE, New York.
15. Tuberculosis of the Bones and Joints: a Pathologic and Clinical Study. NATHANIEL ALLISON, St. Louis.
Discussion to be opened by DALLAS B. PHEMISTER, Chicago, and ROBERT B. OSGOOD, Boston.
16. Operative Orthopedics. ROYAL WHITMAN, New York.
Discussion to be opened by SAMUEL KLEINBERG, New York, and EDWIN W. RYERSON, Chicago.
17. Technic of the Carrel Method of Treating Infections of the Bones and Joints (Moving Pictures). GEORGE W. HAWLEY, Bridgeport, Conn.

Thursday, June 7—2 p. m.

Election of Officers

18. A Further Report of the First Sixty-Five Cases of Cranial Decompression for Selected Cases of Spastic Paralysis Due to Hemorrhage. WILLIAM SHARPE and BENJAMIN P. FARRELL, New York.
19. The Results of the Treatment of Obstetric Paralysis. JAMES W. SEVER, Boston.
Discussion to be opened by JOHN DUNLOP, Washington, D. C., and WILLIAM S. BAER, Baltimore.
20. Pain in the Arm: Subdeltoid (Subacromial) Bursitis (Lantern Demonstration). WALTER M. BRICKNER, New York.
Discussion to be opened by HENRY LING TAYLOR and REGINALD H. SAYRE, New York.
21. Simplified Technic of Laminectomy. FREDERICK J. GAENSLEN, Milwaukee, Wis.
Discussion to be opened by EDWIN W. RYERSON, Chicago, and FREDERICK C. KIDNER, Detroit.
22. An Operation for Congenital Equinovarus Deformity. FRANK R. OBER, Boston.
23. Juxta-Articular Bone Lesions of the Hip. HENRY LING TAYLOR and GEORGE BARRIE, New York.
Discussion to be opened by CHARLES F. PAINTER and ELLIOTT G. BRACKETT, Boston.

Friday, June 8—9 a. m.

JOINT MEETING WITH THE SECTION ON NERVOUS AND MENTAL DISEASES AND THE SECTION ON DISEASES OF CHILDREN, WINTER GARDEN, HOTEL MC ALPIN

SYMPOSIUM ON POLIOMYELITIS

24. Early Diagnosis and Specific Treatment of Poliomyelitis. GEORGE DRAPER, New York.
25. Treatment of Infantile Paralysis, with Special Reference to Study of New York State Cases. ROBERT W. LOVETT, Boston.
26. Practical Aspects of the Treatment of Anterior Poliomyelitis. ARMITAGE WHITMAN, New York.
27. Contagiousness of Acute Poliomyelitis. CHARLES HERRMAN, New York.
28. Results of Present Epidemic of Infantile Paralysis. HENRY L. K. SHAW, Albany, N. Y.
29. The Hematogenous Invasion of the Cerebrospinal Axis in Poliomyelitis. LASALLE ARCHAMBAULT, Albany, N. Y.
30. Recent Additions to Our Knowledge of Poliomyelitis. FREDERICK TILNEY, New York.

SECTION ON GASTRO-ENTEROLOGY AND PROCTOLOGY

MEETS IN GREEN ROOM, HOTEL MC ALPIN

OFFICERS OF SECTION

Chairman—DWIGHT H. MURRAY, Syracuse, N. Y.
Vice Chairman—ANTHONY BASSLER, New York.
Secretary—LOUIS J. HIRSCHMAN, Detroit.
Executive Committee—WILLIAM M. BEACH, Pittsburgh; WILLIAM VAN V. HAYES, New York; CHARLES G. STOCKTON, Buffalo.
(Stenographer, MISS MILDRED L. BLUMENTHAL, New York)

Wednesday, June 6—9 a. m.

1. Chairman's Address: DWIGHT H. MURRAY, Syracuse, N. Y.
2. Achylia. MARTIN E. REHFUS, Philadelphia.
Discussion to opened by CHARLES D. AARON, Detroit; ALBERT F. R. ANDRESEN, Brooklyn; MAX EINHORN, New York, and ALLEN A. JONES, Buffalo.
3. Surgical Treatment of Enterocolonic Chronic Diarrheas. SAMUEL G. GANT, New York.
Discussion to be opened by JOHN F. BINNIE, Kansas City, Mo.; JOHN M. T. FINNEY, Baltimore, and HUGO O. PANTZER, Indianapolis.
4. Chronic Diarrheas Due to Enterocolonic Conditions: The Medical Standpoint. JULIUS FRIEDENWALD, Baltimore.
Discussion to be opened by LEO H. NEUMAN, Albany, N. Y.; BERTRAM W. SIPPY, Chicago, and CHARLES D. SPIVAK, Denver.
5. Rectal and Sigmoidal Conditions in Chronic Diarrhea. JOHN L. JELKS, Memphis, Tenn.
Discussion to be opened by THOMAS C. HILL, Boston; FRED T. MURPHY, St. Louis, and JAMES A. MACMILLAN, Detroit.
6. Statistical and Clinical Review of 450 Cases of Cancer of the Rectum and Colon. JEROME M. LYNCH, New York.
Discussion to be opened by GEORGE B. EVANS, Dayton, Ohio, and FRANK C. YEOMANS, New York.

Wednesday, June 6—2 p. m.

Election of Officers

7. The Symptomatology of the Nervous System in Chronic Intestinal Toxemia. G. REESE SATTERLEE, New York.
Discussion to be opened by SEALE HARRIS, Birmingham, Ala., and CURRAN POPE, Louisville, Ky.
8. Roentgen Observations on the Motor Phenomena of the Normal and Pathologic Colon (Lantern Demonstration). JAMES T. CASE, Battle Creek, Mich.
Discussion to be opened by WALTER C. ALVAREZ, San Francisco, and WILLIAM H. STEWART, New York.
9. Mucosal Type of Gastric and Duodenal Ulcer (Lantern Demonstration). LEWIS GREGORY COLE, New York.
Discussion to be opened by PRESTON M. HICKEY, Detroit, and RUSSELL D. CARMAN, Rochester, Minn.
10. A Further Report of the Use of Quinin and Urea in the Treatment of Hemorrhoids. EMMETT H. TERRELL, Richmond, Va.
Discussion to be opened by COLLIER F. MARTIN, Philadelphia.
11. Anal and Rectal Fistula (Lantern Demonstration). J. RAWSON PENNINGTON, Chicago.
Discussion to be opened by WILLIAM M. BEACH, Pittsburgh.

Thursday, June 7—9 a. m.

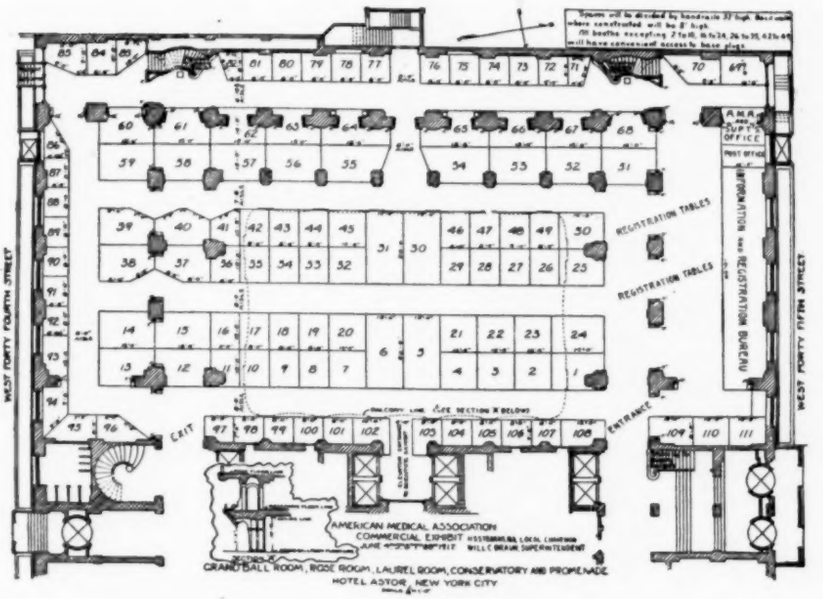
12. Gastric Conditions in Chronic Constipation. WILLIAM G. MORGAN, Washington, D. C
Discussion to be opened by JOHN W. BELL, Minneapolis, PROF. A. J. CARLSON, Chicago, and I. HARRIS LEVY, Syracuse, N. Y.
13. Autointoxication in Chronic Constipation. HORACE W. SOPER, St. Louis.
Discussion to be opened by HENRY ILLOWAY, New York, and DUDLEY D. ROBERTS, Brooklyn.
14. Enterocolonic Conditions in Chronic Constipation. GRANVILLE S. HANES, Louisville, Ky.
Discussion to be opened by WALTER A. BASTEDO, New York; JOSEPH C. BLOODGOOD, Baltimore, and EMMETT H. TERRELL, Richmond, Va.
15. Rectal Conditions in Chronic Constipation. ALOIS B. GRAHAM, Indianapolis.
Discussion to be opened by LEWIS H. ADLER, JR., Philadelphia, and SAMUEL T. EARLE, Baltimore.
16. Dynamic and Adynamic Intestinal Obstruction. JOHN W. DRAPER, New York.
Discussion to be opened by ANGUS MCLEAN, Detroit.

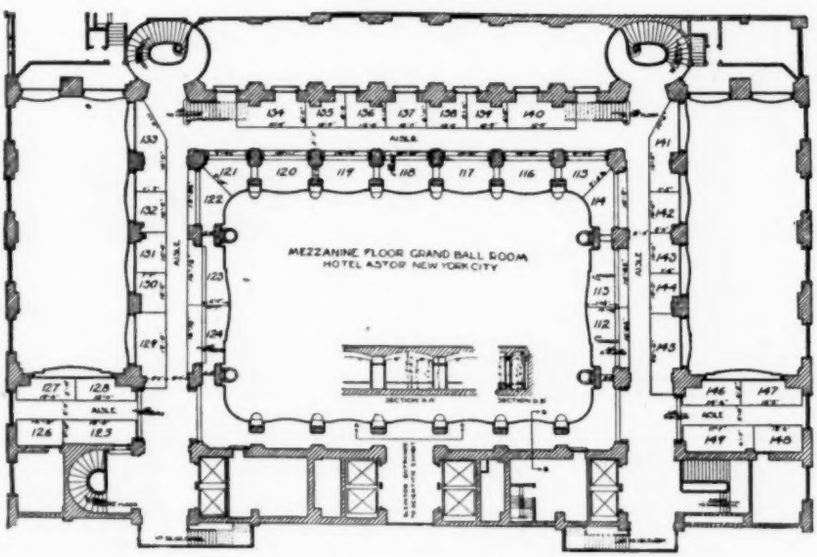
List of Exhibitors

	Space
Abbott Laboratories, The, Chicago	25
Albuquerque, N. M., Cham. Com.	137 (Mez Fl.)
Allen Chapman Co., Boston	So. ½ sp. 62
Allison Co., W. D., Indianapolis	94-95
Aloe Co., A. S., St. Louis, Mo.	21
Amb. Pneu. Splint Mfg. Co., Chicago	99
A. M. A. (Propaganda)	125-126-127-128(M. Fl.)
Anatomik Footwear Co., New York City	88
Armour & Co., Chicago	13
Bard, Charles R., New York City	18
Barnum Van Orden Co., New York City.	52
Barton Mfg. Co., The, New York City	92
Bausch & Lomb Opt. Co., Rochester, N. Y.	15
B. B. Culture Laboratory, Yonkers, N. Y.	42
Becton, Dickinson & Co., Rutherford, N. J.	129 (Mez. Floor)
Berger Bros. Co., The, New Haven, Conn.	34
Betz Co., Frank S., Hammond, Ind.	30-31
Blakiston's Son & Co., P., Philadelphia	108
Borcherdt Malt Extract Co., Chicago	100
Borden's Condensed Milk Co.	23
Brady & Co., Geo. W., Chicago	2
Burdick Cabinet Co., Milton, Wis.	101
Campbell Electric Co., Lynn, Mass.	79-80
Carnes Artificial Limb Co., Kansas City, Mo.	45
Castle Co., Wilmot, Rochester, N. Y.	102
Chicago Surgical & Electrical Co., Chicago	91
Clark & Co., A. C., Grand Crossing, Chicago	96
Davis Co., F. A., Philadelphia	47
De Vilbiss Mfg. Co., Toledo, Ohio	16
Earnshaw Knitting Co., Chicago	90
Eastman Kodak Co., Rochester, N. Y.	60
Foregger Co., The, Inc., New York City.	68
Funk & Wagnalls, N. Y. City.	118 (Mez. Floor)
General Chemical Co., N. Y. City.	117(Mez. Fl.)
General Electric Co., Schenectady, N. Y.	43-44
General Optical Co., Inc., New York City	17
Graham & Berwyn Inc.	130 (Mez. Floor)
Grain Products Co., St. Louis, Mo.	85
Green & Bauer, Inc., Hartford, Conn.	8
Halverson Co., The, Portland, Ore.	111½
Hanovia Chemical Co., Newark, N. J.	65
Hardy & Co., F. A., Chicago	14
Hoeber, Paul B., New York City	55
Hollister-Ashland Laboratories, The, Chicago	46
Horlick's Malted Milk Co., Racine, Wis.	69-70
Hynson, Westcott & Dunning, Baltimore.	63-64
Jaeckh Mfg. Co., Cincinnati	78
Johnson, Mead, & Co., Evansville, Ind.	26
Kaffee Hag Corporation, New York City.	59
Kelley-Koett Mfg. Co., Covington, Ky.	11-12
Kny-Scheerer Co., New York	58-61
Kops Bros., N. Y. City	140 (Mez. Floor)
Lea & Febiger, Philadelphia	51
Leitz, Ernst, Inc., New York City	3
Life Saving Devices, Inc., Chicago	28-29
Linen Underwear Co., Greenwich, N. Y.	66
Lippincott Co., J. B., Philadelphia	109-110
Lister Bros., N. Y. City	84
Lowenthal & Hosick, Louisville, Ky.	86
Machlett & Son, E., New York City	77
Maltine Co., The, New York City	38
May, Berthe, N. Y. City.	139 (Mez. Floor)
McIntosh Battery & Optical Co., Chicago.	35-36
Mellin's Food Co., Boston	71-72-73
Meyer Co., The William, Chicago	74-75
Meyrowitz, E. B., Inc., New York City.	7-20
Moshy Co., C. V., St. Louis.	50
Mulford Co., H. K., Philadelphia	32-33
National Pathological Laboratories, Chicago	111
Pierce, Harvey R. Co., Phila.	134 (Mez. Floor)
Pulvola Chem. Co., Jersey City, N. J.	83
Radium Chem. Co., Pittsburgh, Pa.	9
Rebman Co., New York City	22
Respiratory App. Co., Chicago	131 (Mez. Floor)
R. & E. Mfg. Co., Cleveland	89
Safety Anaesthesia App. Concern, Chicago	76
Saunders Co., W. B., Philadelphia	1-24
Schering & Glatz, New York City	57
Scientific Apparatus Co., New York City.	10
Siebrandt, J. R., Kansas City, Mo. W 5' of sp.	93
Simplex Acct. Syst. Co., Buffalo.	½ of sp. 62
Sorenson, C. M., New York City	41
Southworth Co., The, Troy, N. Y.	67
Squibb and Sons, E. R., New York City.	5-6
Standard X-Ray Co., Chicago	121 (Mez. Floor)
Surg. Narcosis Sup. Co., N. Y.	135 (Mez. Fl.)
Tagliabue Mfg. Co., C. J., Brooklyn	97
Taylor Instrument Cos., Rochester, N. Y.	37-40
Teter Mfg. Co., The, Cleveland	27
Thompson, Plaster Co., Leesburg, Va.	56
Toledo Technical Appl. Co., Toledo, O.	19
Victor Electric Corp'n, Chicago	53-54
Vulcan Coil Co., Los Angeles, Calif.	81-82
Wander Co., The, Chicago	107
Wappler Electric Co., N. Y.	103-104-105
Waukesha Hth. Prod. Co., Waukesha, Wis.	98
Weder Mfg. Co., Philadelphia	106
Weissfeld Bros., New York City. E 7' of sp.	93
Welch Grape Juice Co., Westfield, N. Y.	39
Wilson & Wilson, Boston	87
Woolf, Michael, New York City	4
Wood & Co., Wm., New York City	48-49
Wright Wire Co., Worcester, Mass.	132 (Mez. Floor)
Year Book Pub. Co., Chicago.	132 (Mez. Fl.)

THE COMMERCIAL EXHIBIT AT NEW YORK

A Display of What the Practicing Physician Needs in His Professional Work





PREVIEW OF THE COMMERCIAL EXHIBIT

The Commercial Exhibit this year will include the displays of 100 well-known firms. The Hotel Astor, in which it will be held, is centrally located and of convenient access; its spacious and elaborate Grand Ball Room constitutes a most favorable place for this representative exhibit by purveyors to the medical profession.

Visiting physicians will, no doubt, be especially interested in the variety of scientific commodities assembled for inspection. The exhibition will be of distinct educational value; in fact, it promises, as always, to be one of the most animated departments of the Annual Session.

What can be more beneficial practically to the conventionist than to make a close-at-hand inspection and to witness demonstrations of the recent developments in apparatus, instruments and the sundry devices used in the practice of medicine and surgery; to review the latest books on important topics; to examine the various groups of pharmaceutic and biologic products and, best of all, to come in contact with the men who supply the profession with the necessary accouterments for successful work?

Let no Fellow fail to visit the commercial exhibits. Your presence and interest will encourage the exhibitor and reward him in part for his painstaking effort and expense in preparing his display for your inspection. Don't hesitate

to approach him and ask him for information. Don't be reticent with your questions, doubts or opinions. He will be delighted to know you. We urge you to do your part to inject into this feature of the Session an element of good fellowship and lively interest.

Following is a brief outline of the features of various displays given in their respective classifications:

Books

Nine publishers will display practically all of the more recent works on medicine and surgery. P. Blakiston's Son & Co., Space 108, will have ready for examination "Regional Surgery" in three volumes by J. Fairbairn Binnie, and "Operative Surgery" by forty-four prominent surgeons, in addition to several other new editions of well-known works. J. B. Lippincott Company, Spaces 109 and 110, will display as usual their large and complete line of medical, pharmaceutical and nursing text books and works of reference, Piersol's "Anatomy," the tenth edition of White and Martin's "Genito-Urinary Surgery and Venereal Diseases," "The Ear in General Medicine" by Isaac H. Jones, and many other books of equal worth. Lea & Febiger, Space 51, will offer their usual display of new books and new editions of former works. Special attention is called to their "Modern Urology" by American authors, edited by Hugh Cabot, M.D., and "Diseases of the Thyroid and Thymus Glands" by Andre Crotti, M.D. Among the new editions will figure Jelliffe and White's "Diseases of the Nervous System," Joslin's "Diabetes Mellitus" and numerous others. The C. V. Mosby Company, Space 50, will feature, among other writings, Pottenger's "Clinical Tuberculosis," Brown's "Asthma," Jackson's "Experimental Pharmacology," Bartlett-McKittrick's "After Care of Surgical Cases," and the completed set of Loeb's "Operative Surgery of the Nose, Throat and Ear." In addition to these they will offer for inspection their line of standard monographs and textbooks. Rebman Company, Space 22, will attract many with their display of special works on medicine and surgery. They will offer a fine bit of service by listing visitors' names for subsequent mailing of catalogues. The weary and oft laden delegate will be quick to appreciate this thoughtfulness. W. B. Saunders Company, Spaces 1 and 24, will show as usual an attractive line of new and important books, such as the current volume of "The Mayo Clinic," Carman and Miller's "Roentgen Diagnosis of Diseases of the Alimentary Canal," Volume 4 of Musser and Kelly's "Practical Treatment," etc. They will also show new editions of former popular productions and will present visitors with advance sheets on books in course of preparation. Messrs. William Wood & Co., Spaces 48 and 49, propose to give conventionists a treat by showing timely publications on military medicine and surgery. Among these will be the revised edition of Mason's "Handbook for the Sanitary Troops," Havard's "Military Hygiene," Lagarde's "Gunshot Injuries," etc. This line of books is a step toward preparedness from the standpoint of the alert physician and surgeon.

Pharmaceuticals, Chemicals and Biologic Products

A representation of well-known pharmaceutical houses with a multitude of standard high grade products will greet the visitor this year. Much can be said of the commendable way in which these firms have striven to supply the profession with goods of quality and dependability. Their combined efforts in this direction are, we believe, universally appreciated, and merit the support of the profession whose interests they are eager to serve. Armour & Co., Space 13, will show the organotherapeutic agents, such as pituitary liquid, a physiologically standardized solution of pituitary substance free from chemical preservatives. Standardization of enzymes, ferments and all glandular products are routine duties of the Armour Laboratory. The Abbott Laboratories, Space 25, will display products which are useful in military and civil practice, such as Dakin's new synthetic "Chlorazene," and also such products as Abbott's Typhoid Prophylactic, Slee's Smallpox Vaccine, Diphtheria Antitoxin and other biologics. B. B. Culture Laboratory, Space 42, will explain the methods and advantages of B. B. Culture, a liquid suspension of *B. Bulgaricus*. Other features of the exhibit will include microscopic demonstration and stenographic service free to physicians. Hynson, Westcott & Dunning, Spaces 63 and 64, will exhibit, among other interesting therapeutic and diagnostic products, apparatus for determining the alkali reserve of the blood, according to the method devised by Dr. W. McKim Marriott. Outfits for determining the carbon dioxid tension of alveolar air and the hydrogen-ion concentration of blood will also be shown. H. K. Mulford Company, Spaces 32 and 33, will show the production of Antipneumococcic Serum Polyvalent Mulford by suitable charts; a complete portrayal of the method of furnishing Mercurialized Serum Mulford for intraspinal and intramuscular injection will also form an interesting feature of this exhibit. They will also show moving pictures of the methods of applying Carrel-Dakin's solution in surgical cases. Pulvola Chemical Company, Inc., Space 83, will feature a dry impalpable, white ichthyol as combined with Dolomol; also Pulvola "the Doctor's Baby Powder" and Pulvola Foot Powder. Their unique demonstration of "the Tale the Two Tumblers Tell," is a revelation on toilet powders and "dry oinfments." Schering & Glatz, Space 57, will show several products now manufactured by them in the United States. Prominent among them will be Iocamfen, a new type of free iodin preparation which is of special interest in first-aid and emergency surgery. The Radium Chemical Company, Space 9, with the aid of a dark room will demonstrate and explain to those interested the alpha, beta and gamma rays. They will display the several types of radium applicators now in use by the dermatologist, the gynecologist and the surgeon, as well as the screens used with the different types of applicators. E. R. Squibb & Sons, Spaces 5 and 6, will have assembled for the visitors' inspection their usual line of standardized preparations. This firm has been a purveyor to the chemical needs of the profession for over fifty-eight years.

Apparatus, Instruments and Furniture

The wide variety of apparatus, instruments, office and hospital furniture, new and improved equipment and appliances of all descriptions will constitute a delightful treat to the visiting practitioner interested in knowing about the newer devices that will help him to increase his efficiency or enable him to do more work in less time than with the equipment he is using.

Conventionists interested in up-to-date office, reception room, and hospital furniture and equipment will gravitate toward the booth of W. D. Allison Company, Spaces 94 and 95. We feel that once there, they will enjoy reviewing the innovations and improvements in this line. The Chicago Surgical & Electrical Company, Space 91, will demonstrate constant temperature apparatus, and expect to have on hand a supply of amebas, kept alive on a warm stage, for those who would be interested to watch them under the microscope. Prominent among the progressive and well-known firms will be the DeVilbiss Manufacturing Company, Space 16. Their display will consist of Prescription and Office Atomizers, Nebulizers and Powder Blowers; also special Atomizer and Electric Heater Sets. They have never failed to draw favorable attention at the annual meetings of the past, and there is reason to believe that this year's exhibit will not be lacking in interesting features. The Halverson Company, Space 111½, will show models of electric sterilizers with and without signal lamps. It will be worth the physician's time to inspect them. The exhibit of the Kny-Scheerer Corporation, Spaces 58 and 61, will include some of the latest designs in operating tables, particularly a model which can be raised or lowered to suit the stature of the surgeon, eliminating tiresome stooping. Other features will be the Hawley table, and late developments in sterilizers. A sterilizer detector, which indicates conditions in the interior of the sterilizer during sterilization will also be shown. Life Saving Devices Company, Spaces 28 and 29, will demonstrate the Lungmotor, a resuscitating device, and also their Infant Lungmotor designed for obstetric work only, their Breathing Apparatus and Improved Stretchers. The R. & E. Manufacturing Company, Space 89, will feature Dr. Beachler's Pocket Sphygmomanometer, a well-known blood pressure apparatus which permits of the filtration of air coming in contact with the mercury column, thus preventing oxidation. This instrument records pressure by either the palpation or auscultatory method. C. J. Tagliabue Manufacturing Company, Space 97, will exhibit two types of sphygmomanometers: their Tag-Aneroid type and the Tag-Schneider Mercurial type. They will also show their Real Record Syringes, which are finding favor among surgeons for intravenous injection and other important surgical purposes. The Taylor Instrument Companies, Spaces 37 and 40, will feature their hygrometer in its various forms including the pocket hygrometer for physicians, a complete line of urinalysis glassware, the Tycos self-verifying sphygmomanometer, demonstrated by attendants thoroughly conversant with blood pressure technic; hemocytometer pipets, hospital thermometers, etc. They will also show a new book entitled "Blood Pressure Simplified." Weder Manufacturing Company, Space 106, will show eye, ear, nose and throat instruments. Ophthalmologists, laryngologists and otologists will find themselves at home at this booth among the number of improved instruments for their work.

Foods

The producers of foods who will be represented in the hall have contributed a great deal toward the solution of the dietetic problems which years ago puzzled the average physician. Aside from seeing the newer preparations, the visitor at these booths will gather information which can be used to advantage in every day practice.

Borcherdt Malt Extract Company, Booth 100, will demonstrate and explain the qualities of Borcherdt's Malt Soup-Extract made from 100 per cent. barley malt. The Grain Products Company, Space 85, will distribute Bran-cata Biscuits as samples and explain their value as an adjuvant in the relief of constipation. Don't fail to get your trial package. Horlick's Malted Milk Company, Spaces 69 and 70, will conduct an "original" exhibit consisting of the Original Malted Milk, the Original Malted Milk Lunch Tablets, Horlick's Food and Horlick's Diastoid. Malted Milk will be served hot or cold, and in the form of ice cream. Mead Johnson & Co., Space 26, will exhibit Mead's Dextri-Maltose, a nonproprietary malt sugar, a highly assimilable easily tolerated form of carbohydrate for use in infant feeding. They will exhibit also Mead's Dry Malt Soup Stock which can be used the same as liquid malt soup. Kaffee Hag Corporation will arrange an exhibit in Space 59 showing the evolution of coffee from the blossom to the roasted coffee from which 95 per cent. of the caffein is removed. They will also show a very desirable method of brewing coffee, and will serve Kaffee Hag, both iced and hot, with cream. Lister Brothers, Space 84, will interest you in Lister's Diabetic Flour. This flour is made into palatable muffins, bread, cookies, etc. An expert dietitian will explain and demonstrate their preparation. The Maltine Company, Space 38, will make an attractive and instructive display of its various preparations and of the raw products that enter into their composition. Especial attention will be directed to Maltine Malt Soup Extract. Mellin's Food Company will be present at Spaces 71, 72 and 73. A special feature of their exhibit will be a display of the raw materials that enter into the making of Mellin's Food. Representatives will explain in detail their method of milk modification.

The Dr. A. Wander Société Anonyme of Berne, Switzerland, Space 107, will conduct its first exhibit at an A. M. A. Session this year. Their dietetic food "Ovaltine," a malt milk and egg food beverage, will be displayed. A number of unique features are promised. Waukesha Health Products Company, Space 98, will demonstrate their Diabetic Foods, Hepco Products. Hepco Products include Hepco Flour, the original Soya Bean Meal, Hydro Process. Hepco Dodgers, a diabetic bread in cracker form, and Hepco Grits are also manufactured by this company. The Welch Grape Juice Company at Booth 39 will, as usual, serve Welch's Grape Juice to the visiting physicians.

Roentgenographic Apparatus and Accessories

The Eastman Kodak Company, Space 60, will show what can be done with Seed X-Ray Plates, Eastman X-Ray Films and Dental X-Ray Films. Experts will explain how the plates are made and how to prevent photographic troubles. Sundries for the complete equipment of the dark room will also be displayed; a new camera for making reductions of Roentgen-ray plates to 5 by 7 or lantern slide size will be exhibited. The General Electric Company, Spaces 43 and 44, will exhibit roentgenograms taken with different types of Coolidge x-ray tubes. In addition there will be shown several types of Coolidge tubes and the different steps in the manufacture of the tube will be explained. Do not forget to examine the plate exhibit at the booth of the William Meyer Company, Spaces 74 and 75. All the negatives shown are taken with the Meyer Interrupterless Transformer. Roentgenographers who do their own developing will be given a convenient dark room device when registering at this booth. The exhibit of the Victor Electric Corporation will occupy approximately 300 square feet, Exhibit Spaces 53 and 54, in which they will demonstrate the new Model Snook Interrupterless X-Ray Transformer; also selections of standard apparatus which in the aggregate will make up a complete Roentgen and electromedical department. Vulcan Coil Company, Spaces 81 and 82, will exhibit samples of the Vulcan Coil comprising models from the small portable types to larger cabinet machines and also some accessory apparatus, such as tube holder brackets. Their special feature will be sectional apparatus, so designed that the Roentgen-ray machine is used as a base unit, and treatment units may be added as required. The Wappler Electric Company, Exhibit Spaces 103, 104 and 105, will include among other apparatus the "Bellevue" model Roentgen-ray machine. A feature of this machine is its glass-covered switchboard. A shock-proof switchboard is also included in the little "Empire" radiographic interrupterless machine, which, placed side by side with its giant brother, the "Bellevue," will give the observer a clear idea of the many machines differing in type as well as size that are manufactured by this company. A full line of the "A. C. M. I." cystoscopes and urethroscopes, the May ophthalmoscope, and other apparatus of interest will be additional features.

Eye, Ear, Nose and Throat Appliances and Microscopes

The Bausch & Lomb Optical Company, Space 15, will feature their new binocular microscope which they claim is a real advance in microscope construction. The new ophthalmologic department of this company will introduce a modern test frame with test lenses, the latter designated in vertex refraction. Ophthalmologists will no doubt appreciate this exhibit, which offers them a perspective into the fine points of the manufacture of their professional necessities. General Optical Company, Space 17, will exhibit its regular line of high grade optical goods. The visiting ophthalmologists will be delighted with the character of this display. This firm announces its policy as one of progressiveness, true service and high standards. F. A. Hardy & Co., Space 14, expect to show a "knot pusher" used in tonsil work, two new style lid clamps, an electrically lighted mouth gag and tongue depressor, a corneal dissector, three new style submucous knives devised by Dr. Otto Freer, and the regular Hardy controlled specialties, the Gradle Tonometer, the Gradle Trephine, and the Tydings Snare. In addition they will have a full line of ophthalmologic instruments and eye, ear, nose and throat surgical instruments. The exhibition of E. Leitz, Inc., Booth 3, will comprise a variety of apparatus manufactured by this firm in this country. (Most of their instruments were formerly imported.) The following are just a few of the apparatus manufactured and sold by this company: Duboscq-Leitz Colorimeter, Nephelometer Attachment, Hellige-Leitz Colorimeter, Kuttner-Leitz Colorimeter, Meyer-Leitz Colorimeter, "Radio" Lamp for microscope illumination, Diagnostic Microtomes, "Elei" Centrifuges, and the "Elei" Wassermann-Bath. They will also have a line of American made Blood Counting Apparatus. E. B. Meyrowitz, Inc., Spaces 7 and 20, will exhibit eye, ear, nose and throat instruments, including a number of unusual items of scientific interest. Among these might be mentioned the giant magnet for extracting pieces of steel from the eye, special magnifiers, like the Berger Loupe to assist in the removal of foreign bodies, electrical ophthalmoscopes, auriscopes, and a remarkably complete electrotherapeutic apparatus. Of special interest will be that part of the exhibit of tests and apparatus for testing vision and color sense. This will interest army and navy officers, and physicians in civil life who examine for railroads, steamships and large industrial plants. Michael Woolf, Space 4, will show the new Automatic Cylinder Attachment which now forms an important part of the Ski-Optometer. In addition to the Ski-Optometer they will exhibit their new Headband Retinoscope as well as their new Ophthalmic Bracket and other optical specialties.

Anesthesia Apparatus and Accessories

A. C. Clark & Co., Space 96, will demonstrate their nitrous oxid-oxygen hospital apparatus equipped with automatic regulators, vapor warmer, rebreathing bag and ether attachment; also the Baby Clark outfit for obstetric and minor surgical purposes; fountain spittoons for office, hospital and sanatorium service, etc. The Foregger Company, Inc., Space 68, will demonstrate by means of the "Gwathmey" Gas Oxygen and Ether Apparatus the simplification of gas oxygen anesthesia by the adoption of the sight feed and control valve system to the large size gas and oxygen cylinders. The "Gwathmey" outfits will no doubt interest every conventionist. The Safety Anaesthesia Apparatus Concern, Space 76, will show the Safety-Gas-Oxygen Apparatus. This apparatus administers a mixture washed, moistened and warmed to a temperature of about blood heat maintaining the correct ratio of oxygen in the mixture. The Scientific Apparatus Company, Space 10, will explain the advantages of the Connell Gas Oxygen Apparatus. With this apparatus you can know the quantity of gas you are delivering and can adjust the required dosage several minutes ahead of the clinical reaction, a feature which makes for safety to the patient and economy of gas flow. The Teter Manufacturing Company, Space 27, will exhibit their new sight-feed regulated pressure gas-oxygen outfit designed for use by hospitals, anesthetists and obstetricians. This outfit shows the nitrous oxid and oxygen flowing through jets in tubes immersed in water.

Artificial Limbs, Corsets and Supportive Appliances

The Barnum-Van Orden Company, Booth 52, will give a demonstration of mechanical support applied to physiologic requirements in conditions of relaxed abdominal musculature and visceroptosis; pathologic cases with histories, roentgenograms and illustrations will be presented. Sacro-iliac supports, maternity corsets, postpartum binders, correct posture corsets and postoperative supports constructed to aid in strengthening the abdominal musculature will also be shown. The Berger Brothers Company, Space 34, will show Spencer corsets and supports for the relief of sacro-iliac strain, visceral ptosis, floating kidney, intestinal stasis and ventral or umbilical hernia; also post-operative supports, maternity supports, etc. The exhibition of the Carnes Artificial Arm, Booth 45, will be made interesting by men actually wearing the Carnes arm, showing the practical use to which it can be put, such as using telephone, carrying suitcase, writing, sharpening lead pencils and various other things which are accomplished by its use. Kops Brothers, Space 140 (mezzanine floor), will demonstrate the "Nemo" Wonderlift Corsets. It is claimed that the "Nemo" combines ultrafashion with the necessary hygienic, supportive features.

Electromedical Apparatus

Burdick Cabinet Company, Booth 101, will feature its line of Electric Light Bath Cabinets. This concern has spent years in engineering effort to place the light bath on a scientific basis. Thompson-Plaster Company, Space 56, will exhibit its combination electrical cabinets, including their 1917 model H. H. New features and improvements have been incorporated and now in a space occupied by one cabinet a physician has at his command an electrical equipment capable of doing a number of things from vibration to Roentgen-ray work without shifting the position of physician or patient.

Miscellaneous

The Barton Manufacturing Company, Space 92, will exhibit anatomic rubber stamps for use on history charts and cards, with a practical demonstration of how rubber stamps are made. They will also show stationery embossers with which one can emboss one's own stationery. The National Pathological Laboratory, Space 111, will show interesting slides of pathologic tissue, and also gross specimens. Attending physicians are requested to call at this booth for information regarding the manner in which this institution does its work. Simplex Account System Company, Inc., Space 62, will exhibit the Simplex System of Accounting and Case Recording in cabinets of different designs; also the Simplex Fireproof Safe System—a step forward in record keeping for the busy practitioner. As suggestions along this line are always appreciated, this exhibit should prove of decided interest.

The foregoing descriptive references do not by any means represent every exhibit, as can readily be seen by referring to the alphabetical list of exhibitors on page 1375. The firms mentioned have been able to supply advance information as to what they expected to show—others unfortunately have not.

Fellows who attend the session should make it a point to go to the exhibit hall daily, as it will be practically impossible in one or two visits to inspect everything and receive the maximum benefit from the demonstrations that will be given.

You are urged to feel absolutely free to examine everything without thinking that you are expected to buy. The men who will be in charge of the booths are competent in their respective lines, and their main object will be to give you intelligent information and satisfactory demonstrations of whatever commodity they are showing. They will be delighted to cooperate with you to employ new suggestions and to interchange opinions as to the worthiness of the articles demonstrated. In this way mutual benefit will result both to you and to the firms represented.

It is the aim of the American Medical Association to make the commercial exhibits of educational value. They are "commercial" only to the extent that the articles shown can be bought and that the manufacturer profits by increased patronage after his article has made a correct impression on the physician from a "scientific" standpoint.

Dr. H. S. Stearns, 32 E. Sixty-Fourth Street, New York, is the local chairman of the commercial exhibits; Will C. Braun, 535 North Dearborn Street, Chicago, is the superintendent.

NEW YORK CLINICAL SESSIONS

ADMISSION TICKETS to the Clinics, Demonstrations and Exhibits incorporated in the Clinical Sessions program will be issued *only* to members and guests who register and make application at the American Medical Association Headquarters.

GUESTS other than physicians and dentists will not be admitted to the Medical and Surgical clinics.

SPECIAL BADGES and BUTTONS will be issued to guests (other than physicians and dentists) of the Clinical Sessions and of the American Medical Association who wish to attend the demonstrations, moving pictures and exhibits or inspect the different nursing, medical, municipal and public health institutions arranged for in the program by the Committee on Preventive Medicine and Public Health and the Committees on Allied Topics, including Trained Nursing and Training Schools, District Nursing System, Hospital Social Service, and Planning and Financing of Municipal and Non-Municipal Hospitals.

FELLOWS OF THE AMERICAN MEDICAL ASSOCIATION may apply in advance by mail for tickets of admission to the Clinical Sessions. In writing for the three sessions (Monday afternoon, Tuesday morning and Tuesday afternoon) give first, second and third choice, as seating capacity of amphitheaters is limited. Tickets of admission will be delivered after registration at the American Medical Association Headquarters.

GENERAL CLINICAL SESSIONS COMMITTEE[1]

Wendell C. Phillips, Chairman
Samuel G. Gant, Sec. — **D. Campbell, Asst. Sec.**
Alexander Lambert — **Floyd M. Crandall**

GENERAL MEDICINE

SAMUEL W. LAMBERT, Chairman — KARL M. VOGEL, Secretary
NATHAN E. BRILL — LUDWIG KAST
SAMUEL A. BROWN — SIDNEY STEINER
LEWIS A. CONNER — J. M. VAN COTT

MONDAY AFTERNOON, JUNE 4

BELLEVUE HOSPITAL—2. First Medical Division, Wards A-3, A-4, and B-4 Clinic, Dr. Van Horne Norrie and assistants; Tuberculosis Division, Wards I-2 and I-4, Dr. James Alexander Miller; Third Medical Division, Wards A-6 and B-6, Division Members: Fourth Medical Division, Wards A-2, B-2 and B-3, Dr. Charles E. Nammack. Demonstration: Electrocardiograph: its value in diagnosis, Dr. Alexander Lambert.

BROOKLYN HOSPITAL (Amphitheatre)—2:30. Concepts, nephritis, Dr. J. M. Van Cott; Relation skin lesions to protein sensitizations, Dr. Nathan T. Beers; Chronic appendicitis; its rôle in abdominal symptomatology, Dr. Richard W. Westbrook.

BUSHWICK HOSPITAL, Brooklyn—2. Clinic.

CITY HOSPITAL, Blackwell's Island—2. Clinic: Dr. E. P. Shelby; Clinic: Dr. C. E. Quimby.

CUMBERLAND STREET HOSPITAL, Brooklyn—2:30. Clinic, Dr. E. Rodney Fiske.

EASTERN DISTRICT HOSPITAL—2. Clinic, Dr. George Kessler.

FORDHAM HOSPITAL—3. Bedside clinic, Dr. A. F. Brugman.

GERMAN HOSPITAL AND DISPENSARY—2:30. Medical clinic, Drs. A. Caille, Otto Schwerdtfeger, Max Einhorn.

LEBANON HOSPITAL—2. Ward demonstrations, Attending Physicians and Adjuncts.

METHODIST EPISCOPAL HOSPITAL, Brooklyn—3:15. Radiographic diagnosis, thorax; lantern slides and case histories, Lambert-Patterson treatment bichlorid poisoning; cases; High caloric and low caloric feeding in typhoid fever, Drs. Glentworth R. Butler, Frank B. Cross, Henry G. Webster; Ward cases, Aspects of 1800 poliomyelitis cases, Drs. Hartwig Kandt, Eugene S. Dalton.

MONTEFIORE HOME AND HOSPITAL—2. Introductory; Construction and organization of hospital for chronic diseases, Dr. S. Wachsmann. Medical Service: Clinic, Dr. Louis Hauswirth; Functional tests in nephritis, Dr. A. I. Ringer; Electrocardiography; heart sounds; orthodiascopy, Dr. George Fahr. Laboratory: Ward demonstration, metabolism, Dr. N. W. Janney; Specimens chronic disease, Dr. B. S. Kline. Demonstration: X-ray findings, Dr. Thomas Scholz.

MOUNT SINAI HOSPITAL—2:30. Ward clinic, Dr. E. Libman; Demonstration: artificial pneumothorax (Wards F and L), Dr. Alfred Meyer; Clinic, Dr. Morris Manges.

N. Y. CITY CHILDREN'S HOSPITALS AND SCHOOLS, Randall's Island—4. Clinic, Drs. Thomas S. Southworth, William R. May, William J. Mersereau and staff.

POLYCLINIC HOSPITAL—2. General Medical Amphitheatre: Thoracic aneurysm, Dr. W. H. Katzenbach; Esophageal diseases; strictures, lantern slides, Dr. W. V. V. Hayes; Diagnosis, appendicitis, Dr. A. Bassler; Endocrinous disturbances, Dr. M. Packard; Diagnosis, illustrated by motion pictures, including Wassermann test, intravenous medication, spinal puncture and chest aspiration, Dr. O. Wightman; Clinic, Dr. G. A. Friedman; Strychnin in toxic and functionally inhibited states, Dr. E. S. Bishop.

POST GRADUATE HOSPITAL—1:30. Amphitheatre D: Human sensitization to foreign proteins; demonstrations, Dr. Robert A. Cooke; Amphitheatre D: Enteroptosis and subnutrition; their relationship and treatment, Dr. Max Einhorn; Third Floor Laboratory: Exhibition cases and cardiac clinic, Dr. Robert H. Halsey.

ST. CATHERINE'S HOSPITAL, Brooklyn—2. Clinic, Drs. W. T. Allen, L. H. Fleck.

ST. JOHN'S LONG ISLAND CITY HOSPITAL—2:30. Clinic and demonstration in wards and laboratory; Nephritis: Diagnosis; clinical types; Renal function (laboratory demonstration): Retention waste products in blood; Excretion waste products in urine; Salt and water elimination; Elimination foreign substances; Prognosis and therapeutics based on functional studies; Pathologic demonstration; Drs. Carl Boettiger, Joseph H. Bainton.

ST. LUKE'S HOSPITAL—2. Ward clinic: cerebrospinal syphilis, Pick's disease, Radium treatment leukemia, Dr. S. W. Lambert and assistants; Ward clinics, Dr. Austin W. Hollis and assistants.

ST. PETER'S HOSPITAL, Brooklyn—2. Clinic, Dr. T. A. McGoldrick.

TUESDAY MORNING, JUNE 5

BELLEVUE HOSPITAL—10. Tuberculosis Division: Wards I-2 and I-4, Cases, Dr. James A. Miller; Second Medical Division, Ward A-1, Exhibition foods for high calory diet, Dr. Warren Coleman; Exhibition metabolism ward, Russell Sage Institute of Pathology, Dr. E. F. Du Bois; Third Medical Division, Amphitheatre, Clinic, Dr. Herman M. Biggs.

BUSHWICK HOSPITAL, Brooklyn—10. Clinic.

CENTRAL AND NEUROLOGICAL HOSPITAL, Blackwell's Island—9. Clinic: phases cardiac vascular diseases in the aged, Dr. Selian Neuhof.

GOUVERNEUR HOSPITAL—10:30. Pneumonia types, Dr. C. N. B. Camac; Methods testing kidney function, Dr. C. N. B. Camac.

KINGS COUNTY HOSPITAL, Brooklyn—9. Nephritis, Drs. G. R. Hall, J. M. Van Cott, B. F. Corwin.

Post Graduate Hospital—9. Amphitheatre D: Human sensitization to foreign proteins; demonstrations, Dr. Robert A. Cooke; Heart disease clinic, Dr. Robert Abrahams; Nephritis diet-treatment, Dr. Arthur F. Chace.

PRESBYTERIAN HOSPITAL—10. Ward rounds, Drs. W. T. Longcope, David Bovaird, T. S. Hart, H. T. Swift.

ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH—11. Treatment acute lobar pneumonia, Drs. Rufus Cole, Henry T. Chickering; Treatment diabetes mellitus, Drs. Friederick M. Allen, Reginald Fitz; Mode action and use: digitalis in heart disease and acute infections, Dr. Alfred E. Cohn.

ST. MARY HOSPITAL, Brooklyn—9. Clinic, Drs. J. S. Waterman, J. MacEvitt, J. Leiter.

TUESDAY AFTERNOON, JUNE 5

BELLEVUE HOSPITAL—1. First Medical Division, Wards A-3, A-4 and B-4, Cases, Dr. Van Horne Norrie and assistants; Tuberculosis Division, Wards I-2 and I-4, Dr. James A. Miller; Second Medical Division, Ward A-1, Exhibition, foods for high calory diet, Dr. Warren Coleman; Exhibition metabolism ward, Russell Sage Institute of Pathology, Dr. E. F. Du Bois; Third Medical Division, Wards A-6 and B-6, Cases, Members of Division; Fourth Medical Division, Wards A-2, B-2 and B-3, Cases, Dr. Charles E. Nammack; Economic value dispensary direction ambulant cardiac cases, Dr. Hubert Guile.

BROOKLYN HOSPITAL—2:30. Recognition chronic gallbladder; a. Clinical types; b. Radiographic demonstration pathologic gallbladder, Dr. Dudley Roberts; Recognition and treatment acid intoxications, Dr. Glentworth R. Butler.

BUSHWICK HOSPITAL, Brooklyn—2. Clinic.

CITY HOSPITAL, Blackwell's Island—4. Clinic, Dr. W. A. Bastedo.

CUMBERLAND STREET HOSPITAL, Brooklyn—2:30. Clinic, Dr. E. Rodney Fiske.

FORDHAM HOSPITAL—3. Clinic, Dr. G. Reese Satterlee.

GERMAN HOSPITAL AND DISPENSARY, N. Y.—Clinic, Drs. Caillé, Otto Schwerdtfeger, Max Einhorn.

GERMAN HOSPITAL OF BROOKLYN—2. Endocrinologic diagnosis, Dr. J. Gutman.

HUDSON STREET HOSPITAL (Operating Room)—3. Clinic, cerebrospinal syphilis simulating epilepsy, Drs. Hughes Dayton, Peter Irving.

KINGS COUNTY HOSPITAL, Brooklyn—2. Clinic, Dr. Tasker Howard.

LEBANON HOSPITAL—2. Ward demonstration, Medical Attending Physicians and Adjuncts.

MONTEFIORE HOME AND HOSPITAL—2. Introductory: Physical therapy, thermo, electro, hydro and mechanotherapy, Dr. S. Wachsmann; Medical Service: Vasomotor and trophic disorders, e. g., scleroderma, dermatoneuromyositis, acrocyanosis, etc., Drs. B. S. Oppenheimer, Herbert Wiener; Gastroduodenal technic, Dr. George L. Laporte; Tuberculosis Service: Cases nontuberculosis hemorrhages, Dr. M. Fishberg; 1. Chemotherapy, tuberculosis; 2. Complement fixation, tuberculosis, Drs. Leo. Kessel, H. R. Miller; Pulmonary osteo-arthropathy, tuberculosis, Dr. Leo Kessel.

MOUNT SINAI HOSPITAL—2. Clinic, Dr. E. Libman; Clinic, Ward K, Dr. Nathan E. Brill.

NEW YORK HOSPITAL—2:30. Cardiac diagnosis, Dr. L. A. Conner, Demonstration: cardiac efficiency, Dr. T. B. Barringer; Demonstration: artificial pneumothorax, Dr. William R. Williams.

POST GRADUATE HOSPITAL—12. Amphitheatre D: Mental deficiency problem, Dr. Max G. Schlapp; Early diagnosis incipient pulmonary tuberculosis: Clinic, Dr. Fred J. Barrett; Colitis, Dr. Ludwig Kast; Cases heart disease, with roentgenograms, polygrams and electrocardiograms, Dr. Robert H. Halsey; Medical and surgical aspects duodenal ulcer, Drs. Max Einhorn, Willy Meyer.

PRESBYTERIAN HOSPITAL—2. Clinicopathologic conference, Drs. W. T. Longcope, W. G. MacCallum.

ST. CATHERINE'S HOSPITAL, Brooklyn—2. Clinic, Drs. J. Fuhs, J. Samenfeld.

ST. JOHN'S LONG ISLAND CITY HOSPITAL—2:30. See program, St. John's Long Island City Hospital, 2:30 p. m., Monday.

ST. JOSEPH'S HOSPITAL—2:30. Chest cases with fluoroscope and stereoscope; treatment with artificial pneumothorax, Dr. Henry L. Shively.

ST. LUKE'S HOSPITAL—3:30. Ward clinic: cerebrospinal syphilis, Pick's disease, Radium treatment leukemia, Dr. S. W. Lambert and assistants; Ward clinic, Dr. Austin W. Hollis and assistants.

ST. MARY HOSPITAL, Brooklyn—9. Clinics (bedside), Drs. J. S. Waterman, J. MacEvitt, J. Leiter.

(To be continued next week)

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1. The complete program will be available in due season, and will be mailed to those who request it, sending to the committee a stamped addressed envelope.